



GEF

Mohamed T. El-Ashry
Chief Executive Officer
and Chairman

Global Environment Facility

1818 H Street, NW
Washington, DC 20433 USA
Tel: 202.473.3202
Fax: 202.522.3240/3245
Email: melashry@worldbank.org

August 27, 2001

Dear Council Member:

I am writing to notify you that we have today posted in the GEF's website at www.gefweb.org, a medium-sized project proposal from World Bank entitled *Chile: Santiago Foothills: Mountain Ecosystem Conservation*. The GEF will contribute \$725,000 towards a total cost of \$1,209,400.

The specific objectives of the proposed project are to: (i) improve the legal, institutional, and political groundwork required to create a conservation area in the Santiago Foothills; (ii) develop conservation activities in the proposed conservation area; (iii) promote among the urban population an increased environmental awareness of the significance of this ecosystem, as a way to ensure the sustainability of conservation efforts; and (iv) disseminate information on, and promote the concept of, mainstreaming mountainous ecosystems conservation efforts into urban planning processes

The project proposal is being posted for your information. We would welcome any comments you may wish to provide by September 18, 2001, in accordance with the procedures approved by the Council.

If you do not have access to the Web, you may request the local field office of UNDP or the World Bank to down load the document for you. Alternatively, you may request a copy of the document from the Secretariat. If you make such a request, please confirm for us your current mailing address.

Sincerely,

Mohamed T. El-Ashry
Chief Executive Officer
and Chairman

cc: Alternates, Implementing Agencies, STAP

OFFICE MEMORANDUM

DATE: August 9, 2001

TO: Mr. Kenneth King, Assistant CEO,
GEF PROGRAM COORDINATION

FROM: Lars Vidaeus, GEF Executive Coordinator



EXTENSION: 3-4188

SUBJECT: **CHILE: Santiago Foothills
GEF Medium Size Project (MSP) for CEO Endorsement**

1. Please find attached the electronic file for the revised MSP Brief for the above mentioned project which is ready for circulation from the GEF CEO to Council. In accordance with GEF Operational guidance for approval of MSPs, we look forward to receiving CEO decision/approval by August 30. The revised project brief incorporates GEFSEC comments as follows:
 - With regard to the PDF-A, the preparation activities have been completed prior to submission of the Project Brief to GEFSEC.
 - Government financial contribution: We do not feel that co-financing from the national government should be required and this issue was not raised by GEFSEC during earlier reviews. Many MSPs proposed by NGOs (such as the MBC projects in Central America) feed into broader national plans and programs but do not have direct national government co-financing. Given that the project is to be implemented at a local level, it has strong commitment and co-financing from local governments (which is emphasized in the revised Brief.) The strong local government commitment provides the basis for the project's sustainability (both financial and institutional) after project completion.
 - Financial Sustainability: A more detailed explanation of financing recurrent costs is provided in the revised Brief attached. The local governments plan to continue their strong financial commitment after end of project which will be sufficient to fully finance recurrent costs.

- Link to IAs and EAs: The revised Brief provides a description of the links to other relevant projects of other IA s and EA s, and the planned coordination and collaboration that is necessary.

- 2. In accordance with the standard fee approved by Council for expedited MSPs, the World Bank's implementation fee for this project will be \$146,000.

- 3. We hope these revisions address the concerns raised and look forward to receiving CEO endorsement of this MSP. Please send us a copy of your outgoing letter to Council for our records. Many thanks.

Messrs./Mmes. R. Kirmse, T. Tlaiye, K. Shepardson, T. Bradley, E. Abedin, T. Serra, T. Lovejoy (LCSES); W. Vergara (LCSES/QAT), G. Castro, R. Khanna, D. Aryal (ENV); ENVGC ISC; IRIS2

CHILE

“SANTIAGO FOOTHILLS”

MEDIUM-SIZED PROJECT BRIEF

PROTEGE

July 24, 2001

LIST OF ACRONYMS

CONAF	National Forest Service (Comisión Nacional de Forestación)
CONAMA	National Commission for the Environment (Comisión Nacional de Medio Ambiente)
CORFO	Corporation for the Promotion of Production (Corporación de Fomento de la Producción)
EIES	Environmental Impact Evaluation System (Sistema de Evaluación de Impacto Ambiental)
EES	Environmental Education Strategy
GEF	Global Environment Facility
MINVU	Ministry of Housing and Urban Development (Ministerio de Vivienda y Desarrollo Urbano)
MOV _s	Means of Verification
M&E	Monitoring and Evaluation
MSP	Medium-Sized Project
NGO	Non-government Organization
NPM	National Property Ministry
PRMS	Metropolitan Santiago Master Plan
PROTEGE	Association of Town Councils Project Protégé (Asociación de Municipalidades Proyecto Protégé)
PA	Protected Area
PCC	Public Consultation Council
PDF	Project Development Funds
PGD	Project General Director
PIU	Project Implementation Unit
PSS	Pilot Site Selection
PWM	Public Work Ministry
PY	Project Year
SAG	Livestock and Agricultural Service (Servicio de Agricultura y Ganadería)
SNASPE	National State Protected Areas System
TCC	Technical Consultative Council
UCH	University of Chile
UNEP	United Nations Environment Program
WWF	World Wildlife Fund

TABLE OF CONTENTS

PROJECT SUMMARY	3
DETAILED PROJECT DESCRIPTION	10
I. PROJECT DESCRIPTION	10
A. PROJECT RATIONALE AND OBJECTIVES.....	10
B. CURRENT SITUATION.....	10
C. EXPECTED PROJECT OUTCOMES.....	11
D. ACTIVITIES AND FINANCIAL INPUTS.....	12
E. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT.....	15
F. STAKEHOLDER INVOLVEMENT AND SOCIAL ASSESSMENT.....	17
II. INCREMENTAL COST ASSESSMENT	18
BASELINE SCENARIO.....	18
GEF ALTERNATIVE.....	18
INCREMENTAL COSTS.....	18
III. BUDGET	19
PROCUREMENT.....	1920
DISBURSEMENTS, ACCOUNTS AND AUDITING.....	20
IV. PROJECT IMPLEMENTATION PLAN	20
V. PUBLIC INVOLVEMENT PLAN	22
VI. MONITORING AND EVALUATION PLAN	22
VII. PROJECT CHECKLIST	23
VIII. REFERENCES	24
Annex 1: Logical Framework for GEF MSP Santiago Foothills	28
Annex 2. Detailed Budget	3231
Annex 3. Incremental Cost Analysis	3332
Annex 4. Initial List of Project Stakeholders	3433
Annex 5: Methodology Applied for Initial Selection of Pilot Sites	3635
Annex 6: Field Activities to be Implemented in Pilot Sites	3836
Attachment 1: Additional Information on the MSP Project Proposer	4240
Attachment 2: Procurement Under The Project	4644
Attachment 3: Progress Reports, Audits, Disbursements, and Special Account Under The Project	5047

TABLES

Table 1. Incremental Cost Summary (2002-2005) in \$ US.....	<u>1819</u>
Table 2. Budget by Expense Category and Source (US \$).....	19
Table 3. Schedule of Activities and Milestones	21
Table 4. Stakeholders in the Project.....	22
Table 5. Logical Framework	28
Table 6. Detailed Budget.....	<u>3231</u>
Table 7. Incremental Cost Matrix (2002-2005) in \$ US.....	<u>3332</u>
Table 8. Initial List of Project Stakeholders	<u>3433</u>
Table 9. Proposed pilot sites for project-supported restoration activities.....	<u>3635</u>
Table 10. Interventions Proposed for the Recovery and Conservation of Pilot Areas.....	<u>3836</u>
Table 11. Annual Budget (in US\$).....	<u>4442</u>
Table 12. Sources of Revenue (in US\$).....	<u>4442</u>
Table 13. Experience with managing grant-financed projects	<u>4543</u>
Table 14. Procurement Plan for Goods and Services (\$ US).....	<u>4745</u>
Table 15. Allocation of Grant Proceeds (US \$).....	<u>5047</u>
Table 16. Estimated Schedule of Grant Disbursements (US \$).....	<u>5047</u>
Table 17. Project Monitoring and Evaluation Plan.....	<u>5249</u>

PROJECT SUMMARY

PROJECT IDENTIFIERS	
1. Project Name: SANTIAGO FOOTHILLS: MOUNTAIN ECOSYSTEM CONSERVATION	2. GEF Implementing Agency: World Bank
3. Country Or Countries In Which The Project Is Being Implemented: Chile	4. Country Eligibility: Chile qualifies as an official recipient of GEF funds having ratified the Biodiversity Convention (September 9, 1994)
5. GEF Focal Area(s): Biodiversity	6. Operational Program/Short-Term Measure: This project promotes conservation of biological diversity with emphasis on Mountain Ecosystems (Operational Program #4) and Forest Ecosystems (Operational Program #3).
<p>7. Project Linkage To National Priorities, Action Plans, And Programs: In 1998, Chile's Environmental Policy for Sustainable Development, prepared by the National Environmental Commission (CONAMA), acknowledged the importance of the conservation and sustainable use of Chile's biodiversity and specifically underscored that it was the responsibility of the State to adopt actions and measures to conserve the country's ecosystems, species and genetic resources. The Strategy specifically recognized the importance of maintaining the capacity and integrity of ecosystems through the integrated management and increased knowledge of their uses and value including the "goods and services" provided by habitats and recreational areas. As part of this Strategy, CONAMA also highlighted the importance of protecting specific geographic areas of the country as a fundamental instrument for the conservation of the country's biodiversity patrimony.</p> <p>The existing and future development of Santiago's metropolitan area is governed by the Metropolitan Santiago Master Plan (PRMS), which is a normative and regulatory territorial planning tool administered by the Ministry of Housing and Urban Development (MINVU). The PRMS has classified the Santiago Foothill ecosystem as an "Ecological Conservation Area," a special land use designation for those areas to be "preserved in natural condition, in order to ensure and contribute to environmental balance and quality." In 1998, MINVU commissioned a survey of potential natural sites in the Santiago metropolitan area to be considered for conservation status. The results of the survey indicated that 19 out of the 24 sites surveyed were located in the Foothills and confirmed the importance of this ecosystem in the metropolitan region. The PRMS provides for the development of more detailed sectional plans, which are compatible with the Plan's broader planning framework. A sectional plan is to be developed for the Santiago Foothills, which will reflect the importance of the area's natural values and resources and limit urban growth while permitting access to the area through the identification of permitted activities. Upon completion of the sectional plan, the results will be presented to MINVU and the PRMS will be modified accordingly. A key output of the GEF-supported Mid-size Project (MSP) proposed below, will be in the development of a Master Conservation Management Plan, which will be a major input into the aforementioned sectional plan.</p> <p>The importance given to the conservation of the Santiago Foothills at national level is reflected at municipal level. The creation of the PROTEGE Project in 1993 (see below) by an association of seven municipalities, for the purpose of conserving the Foothills through the promotion of an integrated and coordinate approach to their use, is an indicator of the commitment that exists at local level.</p> <p>Finally, CONAMA considers that the successful incorporation of Santiago's Foothills into the sustainable development of the metropolitan area would serve as a model for the conservation of other fragile mountainous ecosystems in proximity to urban areas and could prove relevant to other cities, both in Chile (e.g., Temuco, Chillán, Valparaíso, Coyhaique) and the region (Bogotá and Quito, Lima).</p>	

8. GEF National Operational Focal Point Review And Date Of Country Endorsement: GEF Focal Point: CONAMA. Project endorsed by CONAMA in correspondence with World Bank dated November 11, 1999, D.E. N° 995639, and reconfirmed by CONAMA letter dated April 30, 2001.

PROJECT OBJECTIVES AND ACTIVITIES

9. Project Rationale and Objectives:

Goal

The project's goal is to protect, conserve, and restore in-situ a 12,900 ha area located in proximity to Santiago consisting of a representative example of a Mediterranean-mountainous ecosystem (i.e., the Santiago Foothills).

Objectives

The specific objectives of the proposed project are to: (i) improve the legal, institutional, and political groundwork required to create a conservation area in the Santiago Foothills; (ii) develop conservation activities in the proposed conservation area; (iii) promote among the urban population an increased environmental awareness of the significance of this ecosystem, as a way to ensure the sustainability of conservation efforts; and (iv) disseminate information on, and promote the concept of, mainstreaming mountainous ecosystems conservation efforts into urban planning processes.

Rationale:

Chile's matorral ecosystem (including the sclerophyllous forest of the Andean cordillera) is the only example of Mediterranean scrub ecoregion found in all of South America and is only one of five such ecosystems in the world. Within the Latin American and Caribbean region, this ecosystem has been designated as a high-priority in terms of the need to conserve its biodiversity (level 1). The geographic range of this ecosystem extends approximately from the Aconcagua valley to the VII region and covers an estimated area of 990,000 ha. The only representative sample of this globally important ecosystem in Chile's National Protected Area System (SNASPE) is the Rio Clarillo National Reserve, a protected area covering only 19,800 ha representing just over two percent of the ecosystem's total areal extent. The restricted representation of this ecosystem in SNASPE has been attributed to its small geographical extent, high degree of private land ownership due to its proximity to several of the country's large metropolitan centers, and limited budgetary resources for the conservation of the country's biodiversity.

Chile's national capital, Santiago, is dominated by a mountainous landscape estimated to cover some 85% of the metropolitan region. In 1997, CONAMA conducted a survey that identified the Santiago Foothills, a primary example of Chilean matorral ecosystem, as of "singular relevance in terms of its biodiversity." The proposed project area, which encompasses 12,900 hectares (ha), is bounded to the west by the 900 meter (mt) elevation limiting the further expansion of Santiago's urban development, the Mapocho and Maipo rivers to the north and south respectively, and the first mountain range to the east. This latter boundary also coincides with the eastern most extension of the political boundaries of two of the seven metropolitan municipalities involved in conservation efforts of this significant ecosystem (i.e., Lo Barnechea and San José Maipo). The altitude of the proposed area ranges between 900 and 3,250 meters. The area consists of 34 micro-basins, five of which measure between 1,000 and 4,000 ha each. There is little systematically collected and organized information on the biodiversity in the Foothills. Nevertheless, one account indicates there are 48 native plants and an additional seven, which have been introduced as exotics. Of the former, 19 are considered to be rare or endangered in the area. One hundred and twenty-six species of fauna have been identified, of which 18 are endemic to the zone and four are exotic; the remainder are considered native to Chile. Twenty-six species are considered to be rare or endangered.

Mountainous ecosystems, particularly those located in proximity to large urban areas, represent some of the world's most vulnerable ecosystems. The Santiago Foothills is no exception to the rule. Major sources of threat include the following:

1. **Urbanization:** Given its proximity to the capital city, there has and continues to be strong development pressures throughout the entire Foothill area. Past development has already contributed to discernible changes in the natural process and features characteristic of the ecosystem. Examples include: accelerated erosion contributing to downstream conflicts associated with sedimentation, loss of habitat, and loss of infiltration capacity. Also to be considered is evidence of changes in such climatic factors as insulation and increases in temperature.
2. **Illegal hunting, wildlife trade, and extraction of plants and soil:** Illegal activities affecting the area's rich biodiversity appears widespread. These include: (i) the capturing of wildlife to support an illegal export industry. Species particularly at risk include the culpeo fox (*Dusicyon culpaeus*), vizcacha (*Lagidium viscacia*), quique (*Galictis cuja*), eared dove (*Zenaida auriculata*), Chilean tinamou (*Nothoprocta perdicarea*) and buzzard-eagles (*Genatoaetus melanoleucus*); and (ii) loss of vegetative cover attributable to illegal logging and fuelwood collection, forest fire, illegal plant extraction (e.g., Chilean soaptree [*Quillaja saponaria*], Chilean Jalap [*Peumus boldus*], extraction of herbaceous species for medical purposes, and humus removal for gardens and parks in the city. The consequences of these illegal practices have been an altered ecosystem as evidenced by an increase in exotic species (e.g., rabbits); the retreat of other species to higher sections of the basins and further into the gorges; and in some cases, the near extinction of endemic species (e.g., the vizcacha, Chilean magnolia [*Canelo sp.*], and peumo).
3. **Uncontrolled recreational use:** Growing interest in the environment and natural areas among the adjacent urban population is increasingly becoming a threat to the Santiago Foothills. Despite their best intentions, uncontrolled access to a growing population of recreational users has proved to be a significant source of forest fires, land degradation, and extraction of vegetation and soil. All these factors have combined to produce a cumulative and adverse impact on the area's biodiversity.

To date, much of the urban population's knowledge and awareness of the Santiago Foothills is associated with the occurrence of natural hazards such as forest fires, landslides, and flooding. Most "environmental" measures in the proposed project area have been in the form of investment in infrastructure and other "hard" mitigation efforts implemented typically in response to an event, rather than through a more pro-active, anticipatory planning approach. As a result, there is little public recognition of the significance and importance of the Santiago Foothills, both in terms of its biodiversity and the relationship between maintaining natural ecosystem processes and degree of risk of occurrence of natural hazard. Nevertheless, with a growing interest among the urban population in the environment, there exists the potential to expand community awareness of the existence and significance of this globally important ecosystem. There already exists some evidence of the existence of this potential (e.g., visitation figures from the three existing interpretative trails in the proposed project area indicate a level that exceeds 20,000 visits per year). Promoting increased public awareness and support for the proposed project will be critical to achieving sustainability for any effort to conserve the Foothills ecosystem.

10. Expected Outcomes: The proposed project has four components: (i) institutional arrangements, public participation and supporting studies; (ii) design and (partial) implementation of a master conservation management plan for the Santiago Foothills; (iii) environmental education and institutional strengthening; and (iv) project implementation, monitoring and evaluation, and information dissemination. The project will be implemented over a three-year period with the expectation that the incremental activities will generate the following outcomes presented by component:

1. **Institutional Arrangements, Public Participation and Supporting Studies:** The primary outcomes under the public participation and institutional arrangements component will be: (i) the development of a consensus among key individual and institutional actors on the importance for and approach to the conservation of the Santiago Foothills; (ii) a proposal for the establishment of a permanent institutional mechanism to promote and co-ordinate the actions of private and public institutions and individuals directed to the conservation of the ecosystem; and (iii) the development of draft legislation leading to the legal creation of a conservation area encompassing the proposed project area.
2. **Design and Partial Implementation of a Conservation Management Plan:** To date, most conservation efforts in the Foothills have been *ad hoc* in nature and have proved to be relatively ineffective in addressing the threats to the ecosystem. A key outcome under this component will be the development of a conservation management master plan, which will guide future interventions in the proposed project area over the medium and long-term. Within the project area, habitat restoration activities in selected pilot areas (e.g., exotic species removal, re-introduction of native vegetative cover, soil restoration) will be supported as a way to provide critical field-tested results needed to support future restoration efforts in the conservation area. Finally, a number of small, conservation infrastructure works will be built (e.g., interpretative trails, mountain refuges, fencing and signposts). At the end of the project life, there will be a network of conservation trails, interpretative infrastructure, and a body of field-based pilot activities suitable to build on in the future as well as support the project's environmental education and information dissemination components.
3. **Environmental Education and Training:** A key outcome from the project will be the development of a broad recognition among the public at large of the significance of the Santiago Foothills, not only as an ecosystem characterized by biodiversity of global importance, but in terms of its importance as a source of a wide range of goods and service for urban dwellers and visitors, alike. This outcome will occur in parallel to the processes leading to the achievement of the project's other outcomes, in particular the establishment of sustainable institutional arrangements and an effective management plan. Relevant personnel in selected institutions will be trained in the importance of incorporating biodiversity considerations into the planning and management processes affecting the growth and development of the Santiago metropolitan region.
4. **Project Implementation, Monitoring and Evaluation, and Information Dissemination:** A small group of core PROTEGE staff, supplemented by consultants, will implement the project and carry out monitoring and evaluation. The M&E is designed to ensure that relevant information is generated to provide the basis for documenting and disseminating experiences and "lessons learned" useful to other relevant efforts in both Chile and the Region.

Selected project outcome indicators (see the attached logical framework, Annex 1, for all indicators).

11. Project Activities To Achieve Outcomes (see project logical framework, Annex 1, for details):

Outcome A) Institutional Arrangements, Public Participation And Supporting Studies; (Total cost \$ 77,400; GEF: \$ 63,000; Other sources: \$ 14,400)

- Activity A1. Negotiating and Completing Institutional Arrangements
- Activity A2. Public Participation Workshops
- Activity A3. Supporting Studies (legal, institutional, economic and social evaluation)

Outcome B) Design And Partial Implementation Of A Master Conservation Management Plan; (Total cost: \$679,900; GEF: \$ 354,900; Other sources: \$ 325,000).

- Activity B1. Preparation of a master conservation management plan for the Santiago Foothills
- Activity B2. Pilot activities
- Activity B3. Construction of conservation infrastructures (nature trails and shelters)

Outcome C) Environmental Education And Institutional Strengthening. (Total cost: \$ 238,500; GEF: \$186,100; Other sources: \$ 52,400).

- Activity C1. Preparation of a long-term environmental education strategy in support of the conservation of the Santiago Foothills
- Activity C2. Implementation of environmental education and training activities
- Activity C3. Design and construction of an environmental education center

Outcomes D) Project Implementation, Monitoring And Evaluation, And Information Dissemination; (Total Cost: \$ 167,000; GEF: \$ 121,000; Other sources: \$ 46,000).

- Activity D1. Overall project implementation
- Activity D2. Monitoring and evaluation
- Activity D3. Distillation and dissemination of results and "lessons learned" from the Foothills project

12. Estimated Budget (US \$)

GEF MSP	725,000
Co/parallel-financing	437,800
Total Implementation	1,162,800
Preparation:	
GEF Block A PDF	25,000
Co-financing PDF	21,600
Total Preparation:	46,600
TOTAL GEF (PDF+MSP)	750,000
TOTAL	1,209,400

INFORMATION ON INSTITUTION SUBMITTING PROJECT BRIEF
<p>13. PROTEGE. This project is being proposed by the Association of Town Councils Project Protege (Asociación de Municipalidades Proyecto Protégé; PROTEGE) which would also act as the leading implementing agency.</p> <p>PROTEGE was established in August 1993 and works on a municipal basis, bringing together seven municipalities within the Santiago region, which include part of the mountainous ecosystem in their territory. The association was created to protect and preserve all mountainous areas bordering the 7 municipalities and to promote the establishment of a large ecological reserve on this location. This objective is being achieved through carrying out various operations promoted and implemented by PROTEGE, either on an independent basis or together with other entities, whether public or private. In general, PROTEGE's mandate is:</p> <ul style="list-style-type: none"> • Recovery of mountain range near Santiago like natural heritage of the region, giving special attention to the conservation, management and arrangement of their main deep valleys. • Promotion of a culture of respect and care about nature. • Contribution to a sustainable development of the city of Santiago and preservation of environmental and heritage value of their mountain ranges (the mountain ranges represent about 85% of the total surface of the Metropolitan Region). <p>Existing staff consists of 7 professionals and 1 administrative support. In addition, the Center works with about 20 associate researchers. Annual budget is approximately US\$170.000. Personnel: an attorney, forestry engineer, journalist, designer, cartographer and 2 mountain interpretive guides. Senior President: Joaquín Lavín I. Former Las Condes mayor (and Presidential candidate in 1999) Assistant President: Fernando Castillo Velasco, mayor for La Reina Executive Director: Felipe Bañados M. Y Deputy Director: Carlos Fuenzalida F.</p> <p>Recent programs:</p> <ul style="list-style-type: none"> • Potential Soil Use Map, 1997, US\$50,000.-, CONAMA – CONAF and PROTÉGÉ. Included a land use management plan for the area covered by the proposed MSP project @ 1:50,000 scale. • Prepared and obtained funding for a Mountain Excursion and Conservation Map project for years 2000/01 from the GEF Small Grants Program (GEF-PNUD) US\$46,600. • Designed and implemented the construction of three mountain nature trails in project area between the period 1996 and 1998. • Successfully negotiated a framework agreement between PROTEGE and CONAF aimed at establishing a monitoring and enforcement system for the Santiago's Foothills including the establishment of a park ranger presence in selected areas in 1999. • Completed the successful negotiation of an easement for community access across a 500 ha parcel of private land in the proposed project area, April 2000. • During the period 1999-2000, initiated negotiations with the National Property Ministry (MBN) to acquire Santiago Foothills lands (300 ha) located within the La Reina municipality for conservation purposes. • During the year 2000, initiated negotiations with an individual landowner to acquire the corresponding rights of use and land management through an easement for a 500 ha area within the proposed project area. • Developed and obtained approval for an Environmental Education and Conservation Management project for the Ramón basin located within the Santiago Foothills project area (3,589 ha). Other participants are: Empresa de Agua Potable de Santiago (private firm); CORFO (state entity); and CONAF (state forestry service).
<p>14. Information On Proposed Executing Agency: Same as above.</p>
<p>15. Date Of Original Submission Of Project Concept: 11/07/2000</p>
INFORMATION TO BE COMPLETED BY IMPLEMENTING AGENCY
<p>16. Project Identification Number: P070654</p>

17. Implementing Agency Contact Person:

Robert Kirmse, Task Manager, Latin America and Caribbean Region, Tel: (202) 473-2362; email rkirmse@worldbank.org
Karin Shepardson, Global Environment Coordinator: Tel: (202) 473-8954; email kshepardson@worldbank.org

18. Project Linkage to Implementing Agency Program(s):

Assistance Strategy (CAS April 17, 1995), along with Bank's sector work on environmental issues in Chile (Report no. 13061-CH), identifies the unsustainable use of natural resources as a serious environmental problem in Chile. The proposed GEF medium sized project is complementary to the institutional strengthening work being undertaken by CONAMA under the Environmental Institutional Development Project (Loan 3529-CL) as well as to the recently approved MSP—Valdivia Forest Zone: Private-Public Mechanisms for Biodiversity Conservation (P058299), which aims to ensure more active participation of the private sector in biodiversity conservation. The proposed project would also complement the work on improved natural resources management being undertaken by the Secano Agricultural Development Project (LN3974-CL). The project also has links with two UNDP (IA) managed projects: (i) PROTÉGÉ has provided preparation advice to the *Governacion de Maipo* (EA) for the preparation of the "*Proteccion de la biodiversidad en cuenca de Aculeo y Altos de Cantillan*" MSP (Chi 00G41), located in the nearby Region Metropolitana; and (ii) it participates in a professional network with CONAMA (EA) and the group that is preparing the full sized "*Conservacion de la biodiversidad en la ecoregion de bosque templado valdiviano*" project

DETAILED PROJECT DESCRIPTION

I. PROJECT DESCRIPTION

A. PROJECT RATIONALE AND OBJECTIVES

The goal of the project is to protect, conserve, and restore in-situ a 12,900 ha area located in proximity to Santiago consisting of a representative example of a Mediterranean-mountainous ecosystem (i.e., the Santiago Foothills) and support the continued functioning of the ecosystem's ecological processes on which much of the city depends. The specific objectives of the proposed project are to: (i) improve the legal, institutional, and political groundwork required to create a conservation area in the Santiago Foothills; (ii) develop conservation activities in the proposed conservation area; (iii) promote among the urban population an increased environmental awareness of the significance of this ecosystem, as a way to ensure the sustainability of conservation efforts; and (iv) disseminate information on, and promote the concept of, mainstreaming mountainous ecosystems conservation efforts into urban planning processes.

B. CURRENT SITUATION

Chile's Mediterranean eco-region extends from Region IV to Region VIII and covers an area of approximately 50,000 km² ha (about 7 percent of the national continental territory). The distinctive features of the eco-region are the dominance of sclerophyllous vegetation, the high-degree of endemism, and a rich floral diversity (Hobbs, 1994). Vegetation is dominated by high bushes with sclerophyllous leaves, small xerophyte and thorny underbrush, succulents and sclerophyllous and laurifolius trees, which reach full development in higher altitudes (Gajardo, 1994; CONAMA, 1995). In terms of biodiversity, this eco-region features the largest number of plant and animal species in the country (Prado & Marquet, 1994); it also contains the largest number of endemic species in the country.

Within the aforementioned eco-region, the matorral ecosystem (including the sclerophyllous forest of the Andean cordillera) is the only example of Mediterranean scrub eco-region found in all of South America and is only one of five such ecosystems in the world. Within the Latin American and Caribbean region, this ecosystem has been designated as a high-priority in terms of the need to conserve its biodiversity (level 1). The geographic range of this ecosystem extends approximately from the Aconcagua valley to the VII region and covers an estimated area of 990,000 ha.

Although this type of system is considered to be high priority in terms of its biodiversity at both national and international level, Chile's conservation efforts to date have been inadequate. The only representative sample of this globally important ecosystem in Chile's National Protected Area System (SNASPE) is the Rio Clarillo National Reserve, a protected area covering only 19,800 ha representing just over two percent of the ecosystem's total areal extent. The restricted representation of this ecosystem in SNASPE has been attributed to its small geographical extent, limited budgetary resources for the conservation of the country's biodiversity, and high degree of private land ownership (75 percent) due to its proximity to several of the country's large metropolitan centers. This latter is considered to be of particular significance as public-supported conservation efforts on private lands in Chile are limited primarily to land use planning instruments (i.e., regulating the use of the land). In the absence of such regulations, globally important ecosystems, such as the Foothills, are highly vulnerable to degradation.

Chile's national capital, Santiago, is dominated by a mountainous landscape estimated to cover some 85% of the metropolitan region. In 1997, CONAMA conducted a survey that identified the Santiago Foothills, a primary example of Chilean matorral ecosystem, as of "singular relevance in terms of its biodiversity." The climate is characterized by winter rainfall and a seven to eight-month long dry season. Topography is represented by hills (53% of the total area) located along the longitudinal mountain range at low and medium altitude; escarpments (34%) located in the highlands, and piedmont (13%) located in lower areas of little slope. Soils are thin and finely textured with large

amounts of gravel, lying on an irregular topography of sharp slopes. Due to the semi-arid climate typical of the piedmont area of Santiago, the dominant vegetation presents a special adaptation to low hydric availability conditions. Vegetation corresponds to forests and sclerophyllous bushes typical of the Andean Foothills (Gajardo, 1994).

In the past, the Foothills were used for extensive grazing, topsoil extraction and extraction of firewood and coal from existing sclerophyllous vegetation. Over time, these historical uses have contributed to a reduction in vegetative cover and soil degradation, which in turn are thought to have contributed to a change in the area's hydrology and exacerbated downstream water quality conflicts. Today, the major activities that are having a direct or indirect adverse impact on the conservation of the area are:

- Unmanaged Recreation: Recreational activities such as picnicking, horseback riding, motorcycling and hiking in the area are not regulated. Such recreational activities increase during the summer season, and are presently difficult to control. Although these activities have a medium to low impact on the resources, they indirectly contribute to increase the risk of forest fires, and thereby to the deterioration of the vegetation;
- Extraction of firewood: In addition to increased soil erosion, the major secondary effect attributed to the continued albeit localized removal of arboreal and bush wood, is the risk of fire caused by the wood collectors; and
- Extraction of soil and humus: This illegal extractive activity causes severe and lasting localized degradation.

The major underlying factor contributing to the aforementioned issues is the proximity of the Foothills to Santiago, the largest population center in the country. Santiago population represents approximately one-third of the country's total population (or some 5 million inhabitants). High human pressure, in combination with the lack of green space (the average park area in Santiago is 10 ha, which corresponds to about 4.2 m²/inhabitant) contributes to deterioration of adjacent landscapes, where access is relatively easy, particularly in terms of removal of top soil, water harvesting, and outbreak of fires.

Perhaps the biggest constraint to developing adequate responses to these issues is institutional. At present, the role of the State in promoting conservation on private lands is limited to the preparation of general territorial planning instruments and regulatory control. However, these are basically aimed at regulating land uses and not to biodiversity conservation. Moreover, institutional responsibilities are shared by different public entities with overlapping powers and responsibilities. Although the country's relevant public institutions are committed to curbing the progressive degradation of the ecosystem, there is a need to incorporate the private sector through an integrated approach to develop and implement the measures required to conserve the soils, flora and fauna of the Foothills. The implementation of the proposed project address this key constraint through the creation of a structure that brings together public and private stakeholders and facilitates the adoption of a common vision and approach to conserve this globally significant eco-system.

C. EXPECTED PROJECT OUTCOMES

This proposed project has four components: (i) institutional arrangements, public participation and supporting studies; (ii) design and the (partial) implementation of a conservation management master plan for the Santiago Foothills; (iii) environmental education and institutional strengthening; and (iv) project implementation, monitoring and evaluation, and information dissemination. The project will be implemented over a three-year period with the expectation that the incremental activities will generate the following outcomes:

- Institutional Arrangements, Public Participation and Supporting Studies: The primary outcomes under the public participation and institutional arrangements component will be: (i) the development of a consensus among key individual and institutional actors on the importance for and approach to the conservation of the Santiago Foothills; (ii) a proposal for the establishment of a permanent institutional mechanism to promote and co-ordinate the actions of private and public institutions and individuals directed to the conservation of the ecosystem; and

(iii) the development of draft legislation leading to the legal creation of a conservation area encompassing the proposed project area.

- Design and Partial Implementation of a Conservation Management Plan: To date, most conservation efforts in the Foothills have been *ad hoc* in nature and have proven to be relatively ineffective in addressing the threats to the ecosystem. A key outcome under this component will be the development of a conservation management master plan, which will guide future interventions in the proposed project area over the medium and long-term. Within the project area, habitat restoration activities in selected pilot areas (e.g., exotic species removal, re-introduction of native vegetative cover, soil restoration) will be supported, serving to produce the critical field-tested results needed to support future restoration efforts in the conservation area. Finally, a number of small, conservation infrastructure works will be built (mainly, interpretative trails, mountain refuges, fencing and signposts). At the end of the project life, there will be a network of conservation trails, interpretative infrastructure, and a body of field-based pilot activities suitable to build on in the future as well as support the project's environmental education and information dissemination components.
- Environmental Education and Training: Under this component, a key outcome from the project will be the development of a broad recognition among the public at large of the significance of the Santiago Foothills, not only as an ecosystem characterised by biodiversity of global importance, but in terms of its importance as a source of a wide range of goods and service for urban dwellers and visitors, alike. This outcome will occur in parallel to the processes leading to the achievement of the project's other outcomes, in particular the establishment of sustainable institutional arrangements and effective management plans. Relevant personnel in selected institutions will be trained in the importance of incorporating biodiversity considerations into the planning and management processes affecting the growth and development of the Santiago metropolitan region.
- Project Implementation, Monitoring and Evaluation, and Information Dissemination: A small group of core PROTEGE staff supplemented by consultants will implement the project activities, as well as ensure that monitoring and evaluation measures will be put in place to ensure that relevant information is generated to monitor project performance as well as provide the basis for documenting and disseminating experiences and "lessons learned" useful to other relevant efforts in both Chile and the Region.

D. ACTIVITIES AND FINANCIAL INPUTS

In order to achieve the proposed project outcomes, the following activities will be implemented (a detailed cost table by activity is attached as Annex 2). As part of the preparation phase, some activities have already been initiated as part of the PDF Block A Grant and are properly noted below.

Outcome A) Institutional Arrangements, Public Participation and Supporting Studies (Total cost: \$77,400; GEF: \$ 63,000; Other sources: \$ 14,400)

The main objective of this activity will be to lay the required political, legal, and institutional foundation leading to the creation of conservation area in the Santiago Foothills. There are three main activities:

Activity A1. Negotiating And Completing Institutional Arrangements.

Under this activity, PROTEGE will continue its on-going work in the identification and meeting with landowners and other major stakeholders in the area. The primary objective of these meetings is to negotiate the needed agreements on rights of way and access on private lands in support of the creation of and access to a conservation area. A number of initial agreements have already been reached through support from the Block A grant (see Annex 4). To this end, based on existing available land ownership data, PROTEGE will follow-up on its initial contacts and complete outstanding arrangements with all key stakeholders and institutions required to adopt a general consensus on the approach to preserve and manage the Santiago Foothills.

Activity A2. Public Participation Workshops.

Building on the initial institutional and individual contacts made under Activity A1 above, a Public Consultation Council (PCC) representing project stakeholders will be created. The PCC will meet through a series of workshops supported under this activity designed to keep stakeholders informed of project progress and achieve consensus on the formulation and implementation of a strategy to conserve the Foothills. Specifically, a total of six workshops (two per year over the three year life of project) will be supported and include project launch and closure workshops.

Activity A3. Supporting Studies.

Under this activity, three studies will be contracted to specialized consultants designed to provide key analyses and products needed to create a conservation area. These are: (i) legal, (ii) institutional, and (iii) economic valuation of the Foothills Area.

Legal Study. As explained in Section II above, Chile's existing legal framework does not provide adequate safeguards to protect biodiversity of global importance when found on private lands. Under the proposed study, effective and applicable environmental regulations, responsible public institutions, institutional powers, and administrative and coordination procedures related to public environmental management will be identified. The study will identify environmental regulatory deficiencies, and determine needed aspects requiring regulation and rank them by priority. Finally, the study will recommend the necessary regulatory and institutional measures required to ensure the adequate conservation of the project area using existing juridical instruments and/or propose new regulations in cases of legal voids.

Institutional Study. The implementation of a plan aimed at the conservation and public use of the Santiago Foothills demands an institutional framework that favors environmental protection, biodiversity preservation, public recreation and education. This study will identify public bodies competent in land use regulation, natural resources, and biodiversity conservation and how best to promote the administrative integration between said bodies and those responsible for enforcing such regulations. Likewise, this analysis will identify the main adjustments required by State administration in order to implement a coordinated and a more efficient management regime. Finally, the study will address how best to integrate the private sector into a joint effort directed at the conservation of the Foothills. The main product of the study will be a proposal leading to the creation of a "mixed" public-private sector entity charged with the promotion, management, and conservation of the Santiago Foothills.

Economic Evaluation Study. This assessment will demonstrate the socio-economic importance of the area and the incremental benefits which will be achieved through supporting conservation measures in the project area. Also, a sociologist will carry a study on the possible effects that the project activities may have on the lives of neighboring peoples and propose mitigation measures if needed. The results of these studies will also provide a valuable input in supporting legal and institutional measures in support of the conservation of the project area.

Outcome B) Design and Partial Implementation of a Master Conservation Management Plan; (Total cost: \$ 679,900; GEF: \$ 354,900; Other sources: \$ 325,000).

Activity B1. Master Conservation Management Plan.

Protection and public use of the Santiago Foothills requires the design of a Master Conservation Management Plan. An initial draft plan will be prepared in project year (PY) 1 based on information found in existing studies and the application of the latest thinking in planning and management of protected areas. This initial plan will be used to guide the implementation of a number of project-supported activities, including the pilot activities and the location of conservation infrastructure. The initial plan will be updated in the PY 3 with information and products derived from the project and other sources. Plan contents will include: a long-term strategy for the conservation of the Santiago Foothills, statement of management objectives, updated inventory of natural resources and processes, threat analysis, proposed zoning categories and permitted uses, enforcement and control, administration of the area, estimated budget and existing (and potential) sources of revenue.

Activity B2. Pilot Activities.

Despite the global importance of the biodiversity of the Santiago Foothills, there exist zones within the proposed project area which have become degraded due to non-sustainable land use practices in the past. The objective of this activity will be to support field interventions *at 5 pilot sites* designed to restore a range of different habitats found in the eco-system. These sites and the methodology employed leading to their selection can be found in Annex 5. Specifically, this activity will support: the confirmation of the pilot sites through field reconnaissance, baseline analyses, design and implementation of the specific habitat restoration interventions, and the implementation of a monitoring program. Results derived from the restoration of these pilot areas will be expanded and applied elsewhere in the conservation area and also made available through the project's information dissemination sub-component (see D3 below). A description of the kinds of reclamation activities that will be carried out under the project is given in Annex 6.

Activity B3. Construction Of Conservation Infrastructure.

Under this activity, the project will support small conservation infrastructure works designed to promote increased awareness and recognition of the role and value of the Santiago Foothills. Specifically, 4 walking trails will be constructed and 2 mountain refuges built. Four additional trail guards will be contracted to implement enforcement and control measures identified in the aforementioned plan.

Outcome C) Environmental Education and Institutional Strengthening. (Total cost: \$ 238,500; GEF: \$186,100; Other sources: \$ 52,400).

Activity C1. Preparation Of A Long-Term Environmental Education Strategy.

The sustainability of the Santiago Foothills conservation area will depend on obtaining a long-term public commitment for its support. This commitment will depend on the level of public recognition of the presence and significance of this unique ecosystem. To that end, a long-term public environmental education strategy (EES) will be developed under this activity. The strategy will seek to increase public awareness and value of this area as an ecosystem and as a source of goods and services and attempt to translate that to promoting greater public motivation and participation in protection and conservation efforts. The primary targets of the strategy will be students, teachers, and the public at large. Following an assessment of results from the implementation of key elements of the EES on a pilot basis (see Activity C2 below), the Strategy will be reviewed and finalized in PY 3.

Activity C2. Implementation Of Environmental Education And Training Activities.

A series of initial activities in support of the key elements of the EES will be supported under this activity. Specifically, pilot activities will include : (i) development and testing of environmental educational materials, the use of field visits, and workshops directed at teachers and students in the 2nd basic cycle in selected municipal schools; (ii) training of municipal employees through workshops and field visits; and (iii) implementation of public awareness campaigns through a range of media. The results of these pilot activities will be reviewed and provide a key input, together with other project-supported inputs, into the finalization of the EES.

Activity C3. Engineering Design And The Construction Of An Environmental Education Center.

The creation of an environmental education center located in the Santiago Foothills area will give the general public the opportunity to learn about this area, in terms of its characteristics, biological importance, and social contribution. Under this activity, an education center will be designed and initial phased constructed.

Outcomes D) Project Implementation, Monitoring and Evaluation, and Information Dissemination; (Total cost: \$

167,000; GEF: \$ 121,000; Other sources: \$ 46,000).

Activity D1. Overall Project Implementation.

The successful implementation of the project will require effective management, coordination and control. To that end, a Project Implementation Unit (PIU) will be established and supported with resources from GEF and PROTEGE, respectively. The PIU will be responsible for overall project implementation and coordination, including final component design, contracting, implementation oversight, supporting public meetings, monitoring and evaluation, and the dissemination of results and “lessons learned” derived from the project. The PIU will be coordinated by a Project Coordinator and a part-time procurement specialist and administrator, with oversight from the Director of PROTEGE. PROTEGE will provide part-time secretarial and technical support on an “as-needed” basis. Office space and overhead will be supplied by PROTEGE and either be in or in proximity to, PROTEGE existing office.

Activity D2. Monitoring and Evaluation.

As an integral part of the project, a monitoring and evaluation (M&E) system will be established to track the progress and impact of the project and to review, as needed, project design and activities. As specified in the logical framework (see Annex 1), indicators have been defined for the goal, purpose and output objectives. The internal monitoring system will track all indicators and feed the information back for use by the project planners as needed. All project activities will be subject to monitoring and evaluation (see Section VI). By means of systematic monitoring, a detailed record will be kept of project progress and results. Documentation of results will provide the required feedback to modify the project approach when necessary. Evaluations will be carried out at mid-term and project completion.

Activity D3. Distillation And Dissemination Of Results And "Lessons Learned" From The Foothills Project.

Dissemination of lessons learned and experience gained from the project to a wider audience will be effected via PROTEGE’s Web page, publications and the production of a project video and CD. The dissemination of “lessons learned” derived from project activities in the Metropolitan Region through these media will provide the basis for the development of a natural ecosystem linked to a large city management model, which could be used to replicate the success of the project and promote future initiatives of protection and management in other natural areas associated with urban centers throughout Chile or in other countries.

E. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT

Sustainability Analysis

Efforts directed toward the management and conservation of the Santiago Foothills will continue beyond the life of the project and eventually lead to the consolidation of the protection and rehabilitation of the ecosystem over time through on-site activities, public awareness, public institutional commitments, and the development of legal instruments. The main avenues which will ensure project sustainability are:

- Government Support and Participation. Activities included in component A will result in greater commitment from the government and other major stakeholders to the objectives and proposed activities supported under the project. This commitment will be documented through formal agreements and undertakings in support of a common vision and actions promoting the protection of the area’s biodiversity resources.
- Public Awareness. Through component C, it is expected that the schools and universities in the area will gradually reflect the presence and significance of the Santiago Foothills in their on-going educational and research programs. Likewise, provision of information and knowledge of this ecosystem through efforts supported under the project will lead to increased visitations to the Foothills for recreational, educational and/or research purposes. Through these experiences, this ecosystem will be increasingly recognized and valued by the public over time.

- Institutional and Legal Provisions. The project includes support leading to the creation of an institutional framework that will support a unified, coordinated approach to the management and protection of this ecosystem. Where lacking, the future institution, together with other legal entities responsible for biodiversity protection and land use planning, will be vested with additional powers based on legal studies supported through the project.

Long-term Financial Support. Financial support for the Foothills area beyond the life of the project will be assured through increased priority given to the area from the public sector based on raising consciousness of the importance of the Foothills and increased public support for its conservation. Additional financial resources to support the conservation of the area will also be generated through: (i) a revenue study supported under the project; (ii) identification of other sources of funding stemming from the project-supported management strategy and plan; and (iii) grants and/or other contributions made to the institution which will be eventually created with partial support of the project. One of the functions of the Steering Committee will be to actively seek such additional co-financing during the implementation phase of the project. Moreover, the municipal governments, that are members of Protégé, are committed to long-term financing of the recurrent costs of project initiated activities. This will at least match their level of project co-financing of US\$231,200 and will most likely be increased over time.

Risk Assessment

The three major risks which could affect the achievement of the project's main objectives are: (i) the high proportion (i.e., 75 percent) of private property ownership in the project area, (ii) long-term public commitment, and (iii) uncontrolled demand.

Specific risks are:

- Private Property. There is the risk of failing to obtain a commitment from all the landowners involved in the project area. This in turn could affect the degree to which conservation initiatives can be implemented in some areas in the Foothills. Proposed mitigation measures involve the design of a global management strategy for the Foothills whose rationale and importance will gradually be recognized and adopted by recalcitrant owners. This objective will be achieved, in part, through standing invitations sent to landowners requesting their participation in project-supported events throughout the LOP.
- Public Commitment. There is a risk that future municipal administrations may not give the same priority to the conservation of the Foothills as exists at present, demonstrated for example through the channeling of resources to other priority areas. Furthermore, while the *seven* participating municipalities have jurisdiction over the Foothills, they lack the enabling legal powers to affect decisions over the area. The main mitigation measures are the activities supported under the educational component to ensure continued, long-term public support for the conservation of the area remains high and the creation of and support for a unified institution coupled with additional powers to existing public institutions in support of the conservation and management of the area.
- Uncontrolled Demand. A third risk entails the likely increased demand generated by opening new recreational areas in the Foothills area which could prove difficult to control in the absence of management and conservation measures supported by sufficient human resources in project area. The development and implementation of the management plan including the placement of four additional trail guards as well as raising public consciousness of the fragility of the area through the project's educational activities will be the primary mitigation measures to address this issue.

F. STAKEHOLDER INVOLVEMENT AND SOCIAL ASSESSMENT

Stakeholder Involvement

During the life of PROTEGE (seven years since its inception), a number of successful agreements and cooperative undertakings have been achieved with the participation from representatives from a wide range of stakeholder groups (see Annex 4). During project preparation, the direct beneficiaries and other principal stakeholders of the proposed project were identified and consulted (see Annex 4). Drafts of the PDF Block A were submitted to most of these groups and their comments reviewed and incorporated into the final proposal. These consultations were complemented by five stakeholder workshops over a period between November and January in which the proposal was presented and discussed. These consultations contributed to further project definition as well as the development of strategies to facilitate broad-based community support among the main project stakeholders.

Social Assessment

Key stakeholders in the project area can be classified into three categories: (i) private landowners who have inherited their lands and have longstanding roots in the Foothills; (ii) property owners, mainly companies, which acquired the land for development purposes; and (iii) State bodies and municipalities. Private landowners are mainly from high-income socio-economic groups with individual properties ranging from 70 to 3,300 ha. The major economic activities in the area are grazing, fruiticulture, and provision of potable water (*Empresa Metropolitana de Obras Sanitarias* which supplies potable water for part of the municipal district of La Reina). There are no indigenous or socially disadvantaged groups living in the project area.

In addition to the aforementioned economic activities, a few minor informal extractive activities exist, often on the private lands of others. These are: (i) collection of medicinal herbs, (ii) removal of humus, and (iii) fuelwood collection. The collection of herbs (and other minor vegetal products) is estimated to consist of approximately 15 people. This group collects medicinal herbs plants from the hills to sell in the market and to the laboratories. Such activities are performed in private plots often with the authorization of the landowners. The extraction of topsoil is thought to be dominated by a group of about 40 people who later sell the product in the city, commanding very good prices. Finally, the extraction of firewood is thought to involve approximately 35 people; the latter two activities are mainly illegal, occurring on the private lands of others without authorization and are thought to be major sources of localized degradation in the Foothills area. All of these activities are sources of supplementary income for these groups, however, the initial assessment has shown that livelihoods are not dependent on those activities.

The nature and significance of the aforementioned activities to these groups will be examined in greater detail by a social scientist who will be contracted in the first six months of the project. Specific issues to be addressed include: (i) further definition of these groups, (ii) the nature and scope of the activities, (iii) an analysis of the project impact on these activities, and (iv) mitigation measures designed to replace these extractive activities with other sources of income. Likely alternatives include employment generated by: (i) construction of the Chilean Trail, (ii) sustainable development activities associated with increased infrastructure, visitation and demand for goods and services in the area, and (iii) employment in conservation activities in the Foothills.

II. INCREMENTAL COST ASSESSMENT

BASELINE SCENARIO

Since 1993, the municipalities, through PROTÉGÉ, have been developing trails in the Foothills, mainly in response to the community's recreational demands, with little concern for biodiversity conservation. It has, through those efforts, raised awareness among authorities and the community at large of the importance and value of the Foothills and has tested limited afforestation efforts, supported monitoring and enforcement activities, conducting research on the soils of the area. Furthermore, taking advantage of present political conditions and the priority given by the Government of Chile to job creation programs, PROTEGE and the Regional Government will initiate the construction of a horizontal trail (for bikers and hikers) representing the lower boundary of the project area (950 to 1,100 m.a.s.l.) to promote outdoor activities and increased knowledge of nature and the need for ecological protection and rehabilitation of the Foothills area (Chilean Trail). In addition to that trail, the other on-going activities which comprise the baseline include supporting the presence of 10 trail guards and the implementation of one pilot activity directed at ecosystem rehabilitation. While these activities represent a significant advance forward, key efforts are critically needed to ensure that the biodiversity concerns are addressed and that a conservation area is truly established and made operational. In the absence of GEF funding, it is unlikely that the creation of a conservation area and the protection of biodiversity of global importance can be achieved. The estimated costs of the baseline are: (i) Municipal funding of some \$201,000 to reach the needed agreements with landowners and local governments; (ii) Regional Government funding of US\$3 million for the Chilean Trail; (iii) UNDP funding of US\$25,000 for mapping of selected areas with recreational potential; (iv) trail guard salaries of US\$ 193,200; and (v) \$134,000 of municipal funding in support of its Association—PROTEGE. The total estimated baseline is US \$ 3,553,200.

GEF ALTERNATIVE

Under the GEF alternative, GEF funds would be used for the incremental activities needed to ensure biodiversity conservation and promote the sustained protection and rehabilitation of this mountain ecosystem. Building upon the baseline activities described above, the GEF Alternative would ensure full public awareness and participation in the planning and implementation phases of foothill conservation, as a way to ensure the conservation of the natural habitat. Without the MSP, marginal and ad hoc efforts to conserve biodiversity would continue, but would be overwhelmed by increased demands for recreation areas. Biodiversity benefits would be minimal at best. With management and conservation measures based on a long-term plan, greater public commitment to conserving the areas and the creation of institutional and participatory mechanisms supported by the MSP activities, the GEF alternative would produce the institutional, social and legal framework required to restore and conserve over the long-run the Santiago Foothill, thereby generating significant biodiversity benefits within this globally significant ecosystem. Moreover, this alternative would help put the Chilean Trail into context and help to ensure that biodiversity protection concerns are taken into consideration for any future developments in the area. The total cost of GEF Alternative is US\$ 4,716,000.

INCREMENTAL COSTS

The difference in cost between the baseline scenario (US\$3,553,200) and the GEF alternative (US\$4,716,000) amounts to US\$1,162,800. The availability of the requested GEF funds (i.e., US\$725,000) for the proposed MSP has enabled PROTEGE to leverage additional funding that would not have otherwise been available. Specifically, additional resources amounting to \$437,800 (i.e., \$231,200 of co-financing and \$206,600 in parallel financing) have already been secured from the participating municipalities and others in support of these biodiversity conservation goals. A summary Incremental Cost Analysis is shown in the following table and more detailed assessment is found in the Incremental Cost Matrix of Annex 3.

TABLE 1. INCREMENTAL COST SUMMARY (2002-2005) IN \$ US.

Component	Baseline	Alternative	Increment (Alternative – Baseline)		
			GEF	Other sources	Total
.A) Public participation, institutional arrangements	201,000	278,400	63,000	14,400	77,400
(B) Design and implementation of a conservation management plan	3,193,200	3,873,100	354,900	325,000	679,900
(C) Environmental education and Public Awareness	25,000	263,500	186,100	52,400	238,500
(D) Project management and dissemination of results	134,000	301,000	121,000	46,000	167,000
Total Project Cost	3,553,200	4,716,000	725,000	195,400	1,162,800

III. BUDGET

The budget below (Table 2) presents expenses for the proposed MSP (baseline costs are not included). The total GEF contribution to MSP development and implementation would amount to \$750,000 (Block A grant + MSP grant). See Annex 2 for detailed costing by outcome/activity and source of financing.

TABLE 2. BUDGET BY EXPENSE CATEGORY AND SOURCE (US \$)

MSP Expense Category	GEF	Other Sources*	Total
Consultants	314,100	0	314,100
Personnel	76,300	167,200	243,500
Goods	75,100	248,200	323,300
Works	46,700	7,400	54,100
Other costs	153,800	15,000	168,800
Workshops	29,000	0	29,000
Contingencies	30,000	0	30,000
TOTAL MSP	725,000	437,800	1,162,800
PDF Block A	25,000	21,600	46,600
TOTAL	750,000	459,400	1,209,400

*The committed project counterpart funding from municipal governments totals US\$231,200, of which US\$15,000 in cash and the rest in-kind, divided between staff and trail guard salaries (\$171,200), office space and operational costs (US\$ 49,000); other, parallel financing is estimated at US\$206,600 and is comprised of rehabilitation of one pilot site by Gas Andes (US\$199,200) and municipal support of bus transport for children under the environmental educational component (US\$ 7,400).

PROCUREMENT

PROTEGE has a procurement system (described in Attachment 1) in place for hiring consultants and for purchases of goods and services, which has been reviewed by the Bank and found consistent with Bank Guidelines. Procurement under the GEF grant will use PROTEGE's procurement practices as set forth in Attachment 2 and summarized in the Procurement Plan Table 1 in Attachment 2.

DISBURSEMENTS, ACCOUNTS AND AUDITING

Disbursements will be released in three annual tranches. Attachment 3, table 2 provides details of the proposed tranche releases and performance targets. MSP accounts would be audited annually applying auditing standards acceptable to the Bank.

IV. PROJECT IMPLEMENTATION PLAN

PROTEGE will be responsible for overall project implementation and coordination, including component design, monitoring and evaluation, and the final dissemination of result. For this, a small Implementation unit will be set up within PROTEGE to ensure implementation success. The unit will consist of: (i) the Director of PROTEGE (part time), who will have overall responsibility for project success and will be responsible for reporting to the Bank, for fund raising for the project, and for project monitoring and evaluation; (ii) the Project Coordinator (part time) who will be responsible for technical matters and for day to day operations; and (iii) an administrative assistant/accountant, who will be responsible for procurement and financial management, as well as for keeping all financial and procurement documents on file. Project management will be based on the establishment of an initial schedule, which will comprise setting up a project-specific coding system for activities, human resources and expenses. The control system will be divided into four elements: professional work hours, documents, material progress, and accounting control. Project scheduling and control system will be supervised by the project assistant. All information kept in the system will be supported by appropriate handling procedures, which will include forms for the different element types. This will keep financial and cash advance statements up to date and facilitate procurement, disbursement, financial audit, internal evaluation and provision of support services and equipment to execute project activities.

Prior to the execution of the project's small-scale infrastructure activities (4 conservation trails, 2 mountain shelters, and 1 environmental education center), all works will be subject to Chile's Environmental Impact Evaluation System (SEIA) as prescribed in the *Ley de Bases del Medio Ambiente (Ley N° 19.300)*. PROTEGE, in coordination with the consultants responsible for the design and implementation of the works, will prepare the required Environmental Impact Declaration evaluating potential impacts and proposing mitigation measures, if required. This will be submitted to CONAMA as prescribed in the aforementioned *Ley*. Once approval is received from CONAMA in the form of a resolution, PROTEGE will send the proposed plan of works together with the relevant resolution to the Bank with a request for a no objection to initiating the works.

The project life is three years. See Table 3 for a detailed implementation plan.

TABLE 3. SCHEDULE OF ACTIVITIES AND MILESTONES

ACTIVITY		PROJECT MONTH																																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
Outcome A) Public participation and institutional arrangements.																																								
A1	Negotiation and signing of bilateral agreements with major stakeholders				X	X	X	X	X	X	X	X	X																											
A2	Workshops designed to develop and promote consensus on the formulation and implementation of a strategy to conserve the Foothills.	X										X						X							X						X							X		
A3	Supporting studies			X	X	X	X											X						X	X						X	X								
Outcome B) Design and (partial) implementation of a conservation management plan.																																								
B1	Preparation of a master plan for the conservation of the Santiago Foothills			X	X	X	X	X	X																															
B2	Priority pilot areas interventions				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			
B3	Construction of infrastructure to support conservation efforts (fencing, control posts, nature trails and shelters)			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X														
Outcome C) Environmental education and institutional strengthening.																																								
C1	Long-term Environmental Education Strategy			X	X	X	X	X	X																															
C2	Environmental education and training pilot activities									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											
C3	Design and construction of environmental education center													X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Outcomes D) Project implementation, monitoring and evaluation, and information dissemination.																																								
D1	Overall project implementation	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
D2	Implementation of a project monitoring and evaluation plan	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
D3	Distillation and dissemination of results and "lessons learned" from the Foothills project			X								X												X													X	X	X	X

V. PUBLIC INVOLVEMENT PLAN

Since its creation in 1993, PROTEGE has promoted the participation of landowners, public authorities (CONAF, CONAMA, SAG, MOP, State Ministers, Regional Administrators, Municipalities), neighbors and community groups in activities aimed at protecting the ecology of the Foothills, and financing the repair and construction of mountain trails. This has been done mainly through workshops, shows, and the preparation and distribution of information brochures. Stakeholder involvement in the project will be ensured through two institutional bodies created to assist PROTEGE in project implementation. A Technical Consultative Council (TCC)-- composed of individuals representing State institutions relevant to the conservation and management of mountain ecosystems -- will advise the PIU on the technical aspects of the project. In addition, a Public Consultation Council (PCC), open to the participation of all project stakeholders, will be the primary mechanism to exchange information and comments on the project. The meeting of the TCC will be scheduled immediately prior to the meeting of the PCC, and the costs will be supported under the project's sub-component, A2. Major stakeholders who will be involved in the project have been identified during preparation and are shown below (Table 4). A more detailed list has been provided in Annex 4.

TABLE 4. STAKEHOLDERS IN THE PROJECT

Types of Entities	Type of Involvement in the Project	
	Potential Project Implementing Entities	Collaborators
NGOs and other private sector		
Foundations and Universities	Fundación Maitenes Universidad de Chile*	
Public Agencies (national)		CONAF (metro region)* CONAMA (metro region)* MINVU (regional) SAG (metro region)*
Public Agencies (local)		Municipality of Lo Barnechea Municipality of Las Condes Municipality of La Reina Municipality of Peñalolen Municipality of La Florida Municipality of Puente Alto Municipality of San José de Maipo
Industry Associations and Corporate Enterprises		Asociación Inmobiliaria de la Cordillera Empresa Metropolitana de Obras Sanitarias (EMOS)
Networks and Social Organizations		
Others		Private landowners

*Proposed members of the Technical Consultative Council

VI. MONITORING AND EVALUATION PLAN

The project will be monitored by PROTEGE and will be the specific responsibility of the Director, with input from the project coordinator and the project sociologist. Key performance and impact indicators are found in the Project Logical Framework (Annex1) and in the M&E plan of Table 3 of Attachment 3. A detailed M&E guideline, which would be developed during the first 6 months of project implementation, will contain project-specific monitoring procedures to ensure continuous monitoring of the project outputs and impacts, as per previously established targets

in the Logical Framework (Annex 1). Evaluation will be based on structural procedures such as check-lists, questionnaires and impact assessment to identify achievements and deficiencies in design and implementation. In these evaluations, particular importance will be given to the view of project beneficiaries, where appropriate. With respect to the studies carried out under the project, the consultants are required to submit two progress reports, which will be closely monitored by the Consejo Consultivo Tecnico. The works will be monitored by the project coordinator, following the dates established in the Gantt table. The activities, and any additional evaluations designed specifically to evaluate the effectiveness of project activities, will be reviewed on an annual basis by the GCT. A mid-term evaluation will be carried out by the implementation unit, with input from the project sociologist, PROTÉGÉ staff and municipal government staff. Information collected through monitoring will be made available via the project's WEB site.

VII. PROJECT CHECKLIST

PROJECT ACTIVITY CATEGORIES:	
BIODIVERSITY	
Protected area zoning/management	
Buffer zone development	
Inventory/monitoring	x
Ecotourism	
Agro-biodiversity	
Trust fund	
Benefit sharing	x
Other	
TECHNICAL CATEGORIES:	
Institution building:	x
Investments:	x
Policy advice:	x
Targeted research:	x
Technology transfer:	
Awareness/information/training:	x
Other:	

VIII. REFERENCES

- Aronson, J., Floret, C., Le Floc'h, E., Ovalle, C. and Pontanier, R. (1993) Restoration and rehabilitation of degraded ecosystems. *Restoration Ecology* 1: 1 - 10.
- Barro, S.C. and Conrad, S.G. (1987) Use of ryegrass seeding as an emergency revegetation measure in chaparral ecosystems. USDA Forest Service General Technical Report PSW-102.
- Bell, D.T. and Froend, R.H. (1990) Mortality and growth of species under stress at Lake Toolibin in the Western Australian wheatbelt. *J. Roy. Soc. West Aust.* 72: 63-66.
- Blondel, J. (1976) L'Influence des reboisements sur les communautés d'oiseaux, l'exemple du Mont-Ventoux. *Ann. Sei. Forest.* 33: 221-245.
- Bond W.J., Cowling R.M. and Richards M.B. (1992) Competition and co-existence. In: *The ecology of fynbos: Nutrients, fire and diversity.* (ed. R.M. Cowling) pp 206-225. Oxford University Press, Cape Town.
- Bond WJ and Stock WD (1989) The costs of leaving home: Ants disperse myrmecochorous seeds to low nutrient sites. *Oecologia* 81: 412-417.
- Bond, W.J. and Slingsby, P. (1984) Collapse of an ant plant mutualism - the Argentine ant, *Iridomyrmex humilis* and myrmecochorous Proteacea. *Ecology* 65, 1031~1037.
- Brandenburg A and Sparling GP (1994) A comparison of total C, microbial C and respiration in revegetated, pasture and native woodland habitats in the Western Australian wheatbelt. In: *Soil biota. Management in sustainable farming systems.* (ed. C.E. Pankhurst, B. M. Doube, V.V.S.R. Gupta and P.R. Grace) pp 173-176. CSIRO, Melbourne.
- CONAF-CONAMA-BIRF, 1995. Catastro y Evaluación de los Recursos Vegetacionales Nativos de Chile. Proyecto CONAMA-CONAF-BIRF.
- CONAMA RM - CONAF - PROTEGE - Gobierno Regional, 1996. Mapas de Usos Potenciales de Suelo, Santiago.
- CONAMA, 1998. Una Política Ambiental para el Desarrollo Sustentable. Chile. (Aprobada por el Consejo de Ministros de la Conama, en 1998).
- Cowling RM and Bond WJ (1992) How small can reserves be? An empirical approach in Cape fynbos. *Biol. Conserv.* 58: 243-256.
- Cowling RM, Holmes PM and Rebelo AG (1992) Plant diversity and endemism. In: *The ecology of fynbos: Nutrients, fire and diversity.* (ed. R.M. Cowling) pp 62-112. Oxford University Press, Cape Town.
- Di Castri, F., Hansen, A.J. and Debussche, M. 1990. *Biological Invasions in Europe and the Mediterranean Basin.* Kluwer, Dordrecht.
- Froend, R.H. and McComb, A.J. (1991) An account of the decline of Lake Towerrinning, a wheatbelt wetland. *J. Roy. Soc. West Aust.* 73: 123-128.

- Froend, R.H., Heddle, E.M., Bell, D.T. and McComb, A.J. (1987) Effects of salinity and waterlogging on the vegetation of Lake Toolibin, Western Australia. *Aust. J. Ecol.* 12: 281-298.
- Groombridge, B. (ed.) (1992) *Global Biodiversity. Status of the Earth's Living Resources.* Chapman & Hall, London.
- Groombridge, B. (ed.). 1992. *Global Biodiversity: Status of hearths living resources.* Chapman & Hall, London.
- Groves, R.H. and di Castri, F. (1991) *Biogeography of Mediterranean Invasions* Cambridge University Press, Cambridge.
- Hobbs, R., 1994. *Global Biodiversity Assessment. Biodiversity and Ecosystem Function : Ecosystem Analyses.* UNEP.
- Hobbs, R.J. (1992) Is biodiversity important for ecosystem functioning? Implications for research and management. In: *Biodiversity of Mediterranean Ecosystems in Australia* (ed. R.J. Hobbs) pp. 211-229. Surrey Beatty and Sons, Chipping Norton, NSW.
- Hobbs, R.J. (1993a) Can we use plant functional types to describe and predict responses to environmental change? In: *Plant Functional Types* (ed. T.M. Smith, H.H. Shugart and F.I. Woodward) Cambridge University Press, Cambridge, in press.
- Hobbs, R.J. (1993b) Effects of landscape fragmentation on ecosystem processes in the Western Australian wheatbelt. *Biol. Conserv.* 64, 193-201.
- Hobbs, R.J., Richardson, D.M. and Davis, G.W. (1994) Mediterranean-type ecosystems: opportunities and constraints for studying the function of biodiversity. In: *Biodiversity and Function in Mediterranean-type Ecosystems* (ed. G.W. Davis and D.M. Richardson. in press. Springer-Verlag, Heidelberg.
- Hobbs, R.J., Saunders, D.A., Lobry de Bruyn, L.A. and Main, A.R. (1993) Changes in biota. In: *Reintegrating Fragmented Landscapes. Towards Sustainable Production and Nature Conservation* (ed. R.J. Hobbs and D.A. Saunders) pp. 65-106. Springer-Verlag, New York.
- Hopper, S.D. (1992) Patterns of plant diversity at the population and species level in south-west Australian mediterranean ecosystems. In: *Biodiversity of Mediterranean Ecosystems in Australia* (ed. R.J. Hobbs) pp. 27-46. Surrey Beatty and Sons, Chipping Norton, NSW.
- Hopper, S.D., van Leeuwen, S., Brown, A.P. and Patrick, S.J. (1990) *Western Australia's Endangered Flora and Other Plants Under Consideration for Declaration.* Department of Conservation and Land Management, Wanneroo, Western Australia.
- Keeley, J.E. (ed.) (1993) *Interface Between Ecology and Land Development in California.* Southern California Academy of Sciences, Los Angeles.
- Lamont, B.B. (1992) Functional interactions within plants - the contribution of keystone and other species to biological diversity. In: *Biodiversity of mediterranean ecosystems in Australia* (ed. R.J. Hobbs) pp. 95-127. Surrey Beatty & Sons, Chipping Norton, NSW.

- Le Houérou, H.N. (1990) Global change: vegetation, ecosystems and land use in the southern Mediterranean Basin by the mid twenty-first century. *Israel J. Bot.* 39: 481-508.
- Macdonald IAW and Richardson DM (1986) Alien species in terrestrial ecosystems of the fynbos biome. In: *The ecology and management of biological invasions in southern Africa.* (ed. I.A.W. Macdonald, F.J. Kruger and A.A. Ferrar) pp 77-91. Oxford UP.
- Main, A.R. (1992) The role of diversity in ecosystem function: an overview. In: *Biodiversity of mediterranean ecosystems in Australia* (ed. R.J. Hobbs) pp. 77-93. Surrey Beatty & Sons, Chipping Norton, NSW.
- McFarlane, D.J., George, R.J. and Farrington, P. (1993) Changes in the hydrologic cycle. In: *Reintegrating Fragmented Landscapes. Towards Sustainable Production and Nature Conservation* (ed. R.J. Hobbs and D.A. Saunders) pp. 146-86. Springer-Verlag, New York.
- McFarlane, D.J., Howell, M.R., Ryder, A.T. and Orr, G.J. (1992) The effect of agricultural development on the physical and hydraulic properties of four Western Australian soils. *Aust. J. Soil Res.* 30, 517-532.
- Ministerio de Vivienda y Urbanismo (MINVU), Darwin Initiative Fund, 1998. Registro de Hábitats Naturales en las Comunas del Area Metropolitana de Santiago, Chile.
- Mooney, H.A., Hamburg, S.P. and Drake, J.A. (1986) The invasion of plants and animals into California. In: *The Ecology of Biological Invasions of North America and Hawaii* (ed. H.A. Mooney & J.A. Drake) pp. 250-272. Springer-Verlag, New York.
- Muñoz M., Núñez H. & Yáñez V., (eds.), 1996. Libro Rojo de los Sitios Prioritarios para la conservación de la diversidad biológica en Chile. Ministerio de Agricultura, CONAF, Chile.
- Norton, D.N., Hobbs., R.J. and Atkins, L. (1994) Fragmentation, disturbance and plant distribution: mistletoes in woodland remnants in the Western Australian wheatbelt. *Conserv. Biol.* submitted.
- Nulsen, R.A. (1992) Changes in soil properties. In: *Reintegrating Fragmented Landscapes: Towards Sustainable Production and Nature Conservation* (ed. R.J. Hobbs and D.A. Saunders) pp. Springer-Verlag, New York.
- Nulsen, RA., Bligh, K.J., Baxter, I.N., Solin, E.J. and Imrie, D.H. (1986) The fate of rainfall in a mallee and heath vegetated catchment in southern Western Australia. *Aust. J. Ecol.* 11: 361-371.
- Prado C., & Alvarez M., 1994. Estado de conservación de la vegetación y flora en Chile, *In: Perfil Ambiental de Chile*, pp: 335-364. Comisión Nacional del Medio Ambiente, CONAMA, Chile.
- Prado, C. & Marquet P., 1994. Proyecto de apoyo a la legislación sectorial: Biodiversidad. Informe de Consultoría para la Comisión Nacional del Medio Ambiente, CONAMA-Chile.
- Rebelo, A.G. (1992) Preservation of biotic diversity. In: *The ecology of fynbos: Nutrients, fire and diversity* (ed. R.M. Cowling) pp 309-344. Oxford University Press, Cape Town.
- Saunders, D.A. (1989) Changes in the avifauna of a region, district and remnant as a result of fragmentation of native vegetation: the wheatbelt of Western Australia. *A case study.* *Biol. Conserv.* 50, 99-135.

- Saunders, D.A. (1993) Community based observer scheme to assess avian response to habitat reduction and fragmentation in south western Australia. *Biol. Conserv.* 64, 203-218.
- Scott, D.F. and van Wyk, D.B. (1990) Effects of wildfire on soil wetability and hydrological behaviour of a forested catchment. *J. Hydrol.* 121:239-256.
- Scott, D.F. and van Wyk, D.B. (1992) The effects of fire on soil water repellency, catchment sediment yields and streamflow. In: *Fire in South African mountain fynbos. Ecosystem, community and species response at Swartboskloof* (ed. B.W. van Wilgen, D.M. Richardson, F.J. Kruger and H.J. van Hensbergen) pp. 216-239. Springer-Verlag, Berlin.
- Scougall, S.A., Majer, J.D. and Hobbs, R.J. (1993) Edge effects in grazed and ungrazed Westem Australian wheatbelt remnants in relation to ecosystem reconstruction. In: *Nature Conservation 3: Reconstruction of Fragmented Ecosystems , Global and Regional Perspectives* (ed. D.A. Saunders, R.J. Hobbs and P.R. Ehrlich) pp. 163-178. Surrey Beatty and Sons, Chipping Norton, NSW.
- Smith, R.C., Huang X, Lyons, T.J., Hacker J.H. and Hick, P.T. (1992) Change in land surface albedo and temperature in southwestern Australia following the replacement of native perennial vegetation: satellite observations. Paper No. IAF-92-0117. 43rd Congress of teh International Astronautical Federation, Washington, D.C.
- Soulé, M.E., Bolger, D.T., Alberts, A.C., Sauvajot, R.S., Wright, J., Sorice, M. and Hill, S. (1988) Reconstructed dynamics of rapid extinctions of chaprral-requiring birds in urban habitat islands. *Conserv. Biol.* 2:75-92.
- World Bank and World Wildlife Foundation, 1997. *A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean*, World Bank and World Wildlife Foundation, Washington, D.C.
- World Bank and World Wildlife Foundation, 1997. *A Conservation Assessment of the Terrestrial Ecoregions of Latin America and the Caribbean*, Washington, D.C..

ANNEX 1: LOGICAL FRAMEWORK FOR GEF MSP SANTIAGO FOOTHILLS

TABLE 5. LOGICAL FRAMEWORK

<p>Goal:</p> <p>To conserve and rehabilitate the national patrimony of Chile's mountainous ecosystems.</p>	<p>Indicators:</p> <p>Declaration of new protected areas; Implementation of management plans for existing protected areas; Increased number of institutions created to protect/conservé these areas; International recognition of significance of Chile's mountainous ecosystems.</p>	<p>Means of Verification (MOV)s:</p> <p>Legal declarations of new protected areas; Legal declarations of expansion of existing protected areas; Management plans made available to the public; International designation of these areas as biosphere reserves Creation of inter-institutional alliances to protect these areas.</p>	<p>Assumptions: (to achieve long-term sustainability)</p> <p>Public and private support for conservation of the environment.</p>
<p>Purpose:</p> <p>To protect, conserve, and restore in-situ, a 12,900 ha area located in proximity to Santiago consisting of a representative example of a Mediterranean-mountainous ecosystem (i.e., the Santiago Foothills).</p>	<p>Indicators (Impact):</p> <ul style="list-style-type: none"> - A ten percent increase, over three years, in woody vegetation cover on pre-selected and measured pilot areas; -10% annual increase in # of trail visitors; - Consensus obtained on a permanent public-private institutional framework for foothill conservation; -10% annual increase to project's web site; -80% increase over 3 years of student/teacher knowledge of conservation efforts; -80% agreement (municipal and local gov) to the master plan. 	<p>MOVs</p> <p>Regulations adopted by relevant public authorities to conserve the Foothills; Visitation statistics maintained at access points;</p> <p>Approved complementary projects promoted/administered by PROTÉGÉ; Results from M&E.</p>	<p>Assumptions</p> <p>Other similar related projects approved and supported.</p>
<p>Outputs:</p> <p>A. Development of the necessary public support, institutions, inter-institutional arrangements, and legal framework to ensure the long-term conservation of the Santiago Foothills.</p>	<p>Indicators:</p> <p>1 draft law in 3rd year; 6 public workshops; 1 proposal to establish institution to administer the Foothills conservation area in 2nd year; 1 economic study.</p>	<p>MOVs</p> <p>Submission of draft law; Workshop minutes; Submission of proposal;</p> <p>Presentation of studies;</p> <p>Presentation of the results of the study.</p>	<p>Assumptions</p> <p>GEF MSP approved;</p> <p>Counter-part and co-financing in place during and after the GEF phase;</p> <p>Public support;</p>

<p>administer the conservation of the Santiago Foothills;</p> <ul style="list-style-type: none"> ◆ Economic study of the “goods and services” provided by the Santiago Foothills to the urban population. 			
<p>Component B.</p>	<p>\$ 186,100</p>	<p>Disbursement and audit reports.</p>	
<ul style="list-style-type: none"> ◆ Preparation of a master conservation management plan for the conservation of the Santiago Foothills; ◆ Restoration of habitats in selected pilot areas; ◆ Construction of conservation infrastructure in project area (fencing, control posts, nature trails and shelters). 	<p>\$ 121,000</p>	<p>Disbursement and audit reports.</p>	
<p>Component C.</p>			
<ul style="list-style-type: none"> ◆ Preparation of a long-term environmental education strategy in support of the conservation of the Santiago Foothills; ◆ Implementation of pilot environmental education and training activities; ◆ Design of an environmental education center. 			
<p>Component D.</p>			
<ul style="list-style-type: none"> ◆ Establishment of the Project Implementation Unit (PIU); ◆ Implementation of a project monitoring and evaluation plan.; ◆ Distillation and dissemination of results and “lessons 			

learned” from the Foothills project.			
--------------------------------------	--	--	--

ANNEX 2. DETAILED BUDGET

TABLE 6. DETAILED BUDGET

Outcome/Activity		GEF	Other Sources*	Total
Outcome A) Public participation and institutional Arrangements;			Committed	
		US\$	US\$	US\$
A1	Negotiation and signing of bilateral agreements with major stakeholders	6,000	4,500	10,500
A2	Workshops designed to develop and promote consensus on the formulation and implementation of a strategy to conserve the Foothills	17,600	8,400	26,000
A3	Supporting studies	39,400	1,500	40,900
	Total Outcome A	63,000	14,400	77,400
Outcome B) Design and partial implementation of a conservation management plan.				
B1	Preparation of a master plan for the conservation of the Santiago Foothills	50,500	12,000	62,500
B2	Priority pilot area interventions	167,700	205,700	373,400
B3	Construction of infrastructure to support conservation efforts (fencing, control posts, nature trails and shelters)	136,700	107,300	244,000
	Total Outcome B	354,900	325,000	679,900
Outcome C) Environmental education and institutional strengthening.				
C1	Preparation of a long-term Environmental Education Strategy to support the conservation of the Santiago Foothills	30,600	0	30,600
C2	Environmental education and training activities	54,500	7,400	61,900
C3	Prefeasibility study and implementation of an environmental education center	101,000	45,000	146,000
	Total Outcome C	186,100	52,400	238,500
Outcomes D) Project implementation, monitoring and evaluation, and information dissemination.				
D1	Overall project implementation,	92,300	46,000	138,300
D2	Implementation of a project monitoring and evaluation plan,	7,700	0	7,700
D3	Distillation and dissemination of results and "lessons learned" from the Foothills project	21,000	0	21,000
	Total Outcome D	121,000	46,000	167,000
	Total Project Implementation Cost	725,000	437,800	1,162,800
	Project Development Funds (PDF Block A)	25,000	21,600	46,600
	TOTAL	750,000	459,400	1,209,400

* The committed project counterpart funding from municipal governments totals US\$231,200, of which US\$15,000 in cash and the rest in-kind, divided between staff and trail guard salaries (\$171,200), office space and operational costs (US\$ 49,000); other, parallel financing is estimated at US\$206,600 and is comprised of rehabilitation of one pilot site by Gas Andes (US\$199,200) and municipal support of bus transport for children under the environmental educational component (US\$7,400).

ANNEX 3. INCREMENTAL COST ANALYSIS

TABLE 7. INCREMENTAL COST MATRIX (2002-2005) IN \$ US.

Outcome / Activity		Base Line			Incremental Analysis		
		GOC	PROTEGE/ Other	Total Base Line US\$	Other* Sources	Proposed Alternative	GEF Increment
Outcome A) Public participation and institutional arrangements.							
A.1	Negotiation and signing of bilateral agreements with major stakeholders	0	0	0	4,500	10,500	6,000
A.2	Workshops designed to develop and promote consensus on the formulation and implementation of a strategy to conserve the Foothills	0	0	0	8,400	26,000	17,600
A.3	Supporting studies	0	201,000	201,000	1,500	241,900	39,400
TOTAL A		0	201,000	201,000	14,400	278,400	63,000
Outcome B) Design and (partial) implementation of a conservation management plan.							
B.1	Preparation of a master plan for the conservation of the Santiago Foothills (to include a development and implementation of a surveillance and enforcement plan)	0	0	0	12,000	62,500	50,500
B.2	Priority pilot areas interventions.	0	0	0	205,700	373,400	167,700
B.3	Construction of infrastructure to support conservation efforts (fencing, control posts, nature trails and shelters)	3,000,000	193,200	3,193,200	107,300	3,437,200	136,700
TOTAL B		3,000,000	193,200	3,193,200	325,000	3,873,100	354,900
Outcome C) Environmental education and institutional strengthening.							
C.1	Long-term Environmental Education Master Plan	0	0	0	0	30,600	30,600
C.2	Environmental education and training pilot activities	0	0	0	7,400	61,900	54,500
C.3	Prefeasibility study and implementation of environmental education center	0	25,000	25,000	45,000	171,000	101,000
TOTAL C		0	25,000	25,000	52,400	263,500	186,100
Outcomes D) Project implementation, monitoring and evaluation, and information dissemination.							
D1	Overall project implementation	0	0	0	46,000	138,300	92,300
D2	Implementation of a project monitoring and evaluation plan	0	0	0	0	7,700	7,700
D3	Distillation and dissemination of results and "lessons learned" from the Foothills project	0	134,000	134,000	0	155,000	21,000
TOTAL D		0	134,000	134,000	46,000	301,000	121,000

TOTAL	3'000'000	553,200	3,553,200	437,800	4,716,000	725,000
--------------	------------------	----------------	------------------	----------------	------------------	----------------

* Municipal governments

ANNEX 4. INITIAL LIST OF PROJECT STAKEHOLDERS

TABLE 8. INITIAL LIST OF PROJECT STAKEHOLDERS

MAIN INSTITUTION	HIERARCHY	TYPE	ROLE	CONTACT MADE
CONAMA	Metropolitan Region	Public	Coordination of environmental issues	Regional Director Head, Natural Resources Unit
CONAF	Metropolitan Region	Public	Responsible for forestry resources	Director CONAF MR Officer in charge of wild areas
SAG – Ministry of Agriculture, DEPROREN (Department for the Protection of Natural Resources)	Metropolitan Region	Public	Responsible for natural resources (soil, fauna)	Regional Director Comptroller Director DPROPREN Officer in charge of wild fauna
MINVU	Metropolitan Region	Public	Responsible for territorial planning	Regional Secretary
Universidad de Chile	Fac. of Forestry Science	Public	Academic-Scientific	Academic staff, Department of Silviculture
Municipality of Lo Barnechea	City Council	Public	Community	City Mayor and Council
Municipality of Las Condes	City Council	Public	Community	City Mayor and Council
Municipality of La Reina	City Council	Public	Community	City Mayor and Council
Municipality of Peñalolen	City Council	Private	Community	City Mayor and Council
Municipality of La Florida	City Council	Private	Community	City Mayor and Council
Municipality of Puente Alto	City Council	Private	Community	City Mayor and Council
Municipality of San José de Maipo	City Council	Private	Community	City Mayor and Council
Asociación Inmobiliaria de la Cordillera	Local	Private	Trade/Business Association	Board of Directors
Asociación de Juntas de Vecinos de la Precordillera	Local	Private	Community	Coordinators
Empresa Metropolitana de Obras Sanitarias (EMOS)	Regional	Private	Service company (water)	General Manager Board of Directors
Fundación Maitenes	NGOs	Private	Environmental Education	General Manger
Las Varas Farm (600 ha)	Local	Private	Owner	Peter Von Kiesling
Farm Universidad Católica	Local	Private	Owner / Institutional	Manager
Benchke Farm (130 ha)	Local	Private	Owner	Mr. Rolf Benchke
Quebrada de Ramón Farm (3,000 ha)	National	Public (CORFO)	Owner	CORFO Vice-president /Comptroller
Sociedad P & G Larraín Farm (130 ha)	Local	Private	Owner	Owner

Santiago Foothills: Biodiversity Conservation of Mediterranean-Mountain Ecosystem

Police Force Farm (Ministry of Public Property) (230 ha)	Local	Public	Owner	Regional Secretary
Municipality of La Reina land plot (120 ha)	Local	Public	Owner	City Major
MAIN INSTITUTION	HIERARCHY	TYPE	ROLE	CONTACT MADE
Army of Chile land plot (170ha)	Local	Public	Owner	Generals responsible for Army property
Luis Calvo's land plot (600 ha)	Local	Private	Owner	Owner
Juan de Dios Vial's land plot (800 ha)	Local	Private	Owner	Owner
Inversiones Macalto land plot (80 ha)	Local	Private	Owner	Owner
Panul Farm (300 ha)	Local	Private	Owner	Owner
José Luis Zabala's land plot (350 ha)	Local	Private	Owner	Owner
Fernández Wood's land plot (500 ha)	Local	Private	Owner	Owner

ANNEX 5: METHODOLOGY APPLIED FOR INITIAL SELECTION OF PILOT SITES

During this initial phase of the project, five areas have been selected to conduct pilot restoration activities. The criteria used for selecting the areas is given below and the selected areas are shown in Table 1:

- a) **Representative of environmental conditions:** the idea is that the pilot areas be representative of the diverse characteristics of the overall project area (i.e. the Santiago Foothills). Three factors were used for determining representation: (i) the vegetation type, as shown in available publications, should be representative of a larger area; (ii) physiographic characteristics (soil types, slope) should be representative of those most commonly found in a particular zone; and (iii) the level of degradation and threat should be common to the types found through any particular vegetation and physiographic type. Indirect means will be used to determine degradation, such as distance from population centers, level of human activity and presence of introduced species.
- b) **Political/administrative factors:** The areas should be selected in a uniform manner throughout the administrative boundaries of the project area, attempting to include all the involved comunas.
- c) **Accessibility:** This is basically operational and financial criteria as the objective is to maximize the demonstration and learning effect given the available financing. Where possible, more accessible sites will be selected over less accessible sites to control the costs of operations. Given extra co-financing, additional, more difficult to access sites will be added to the list.
- d) **Control and Protection:** Sites with existing protection or with natural protection will be selected over sites that prove more difficult to control so as to minimize the need for additional protection measures.

Using this selection criteria, seven sites have initially been selected, as shown in the table below. Of these sites, pilot restoration activities will be implemented on five areas during the life of the project. When additional resources are made available, the other two sites will be included, as well as additional, more difficult to access sites not yet identified.

TABLE 9. PROPOSED PILOT SITES FOR PROJECT-SUPPORTED RESTORATION ACTIVITIES

COMMUNE	PILOT AREA	SITE CHARACTERISTICS AND MAJOR SOURCES OF DEGRADATION	CHARACTERISTIC HABITATS
Lo Barnechea	Vallecito - Puente Ñilhue	This valley and trail is used by day hikers and campers, with degradation caused by excessive off-trail pressure.	Recreational Zone with native forests, in particular sclerophyllous species.
	Predio de P. Von Kiesling	Slope vegetation degraded by vandalism to an extent that natural reproduction of the native species is halted.	Xerophytic species (cactus, matorral espinoso)
Las Condes	Quebrada de Ramón	Severe degradation brought about by firewood collection and over-grazing.	Matorral esclerófilo Matorral esclerófilo andino con Frangel (<i>Kageneckia angustifolia</i>)
La Reina	Predio de Carabineros	Overgrazing has led to complete degradation of the tree and herbaceous vegetation.	Bare areas High-risk erosive soils
Peñalolén	Predio del Ejército	Complete loss of vegetation cover due to over grazing and illegal harvesting; use of some degraded areas as dump site.	Bare soils and advanced soil erosion
	Quebrada Honda	Peumo forests in the canyons have been degraded from soil and leaf collections as well as from recreational pressure.	Sclerophyllous forests (<i>Cryptocarya alba</i>)
Puente Alto	Bosque y matorral	Forests degraded from soil, fuelwood and leaf	Sclerophyllous forests – peumo

COMMUNE	PILOT AREA	SITE CHARACTERISTICS AND MAJOR SOURCES OF DEGRADATION	CHARACTERISTIC HABITATS
	esclerófilo en laderas.	collection.	and Matorral (<i>Cryptocarya alba</i>)

ANNEX 6: FIELD ACTIVITIES TO BE IMPLEMENTED IN PILOT SITES

1. Environmental Baseline Survey for the Conservation of Pilot Areas

1.1 Environmental Characterization of Pilot Areas

A baseline survey will be carried out to assess the current status of each selected pilot area, taking into consideration the physical, biotic, and land use variables. The baseline for each pilot area aims to establish a benchmark for future evaluations of the effectiveness of conservation interventions. This information will provide important data on the degradation level and potential hazards of these areas, along with the identification of historical factors that create this deterioration and the causes of current threats.

1.2 Interventions

Recovering a stable condition in line with the sustainability of the bio-type is a natural feature of ecosystems, and it depends much on the bio-climatic condition of the rainfall and temperature and on the availability of nutrients in the substratum. However, this recovery can take hundreds of years, and even become impossible if the degradation conditions still persist. It is, therefore, essential to develop possible interventions both on the vegetable cover and soil in order to stimulate a more immediate expression of the regenerative capacity of the ecosystem.

1.3 Identification of Interventions in Pilot Areas

Below is a list of the interventions to be considered under the proposed project, which are based on the preliminary study of degradation of each of the environments represented in the pilot areas.

TABLE 10. INTERVENTIONS PROPOSED FOR THE RECOVERY AND CONSERVATION OF PILOT AREAS

INTERVENTION	PILOT AREA						
	Vallecito – Puente Ñihue	Peter Von Kiesling's Property	Quebrada de Ramón	Carabineros' Estate	Army Estate	Quebrada Honda	Sclerophyc Woods and Brushes in Hill slopes
ACTIVE REVEGETATION - Reforestation - Enrichment Planing - Direct Sowing - Re-sowing (redistribution of vegetal humus)		X X		X	X	X X	X X
FOREST INTERVENTIONS - Release Cutting - Pruning - Clearing of Seedling - Clearing			X X X X			X X X X	X X X X
WATER CATCHMENT - Water Collectors - Surrounding Furrows		X X					
MANAGEMENT OF FAUNA - Installation of perches for predatory birds (lagomorph control) - Wild Fauna No Hunting Campaign		X X		X X	X X		
EROSION CONTROL - Erosion Control	X			X	X		

OTHER INTERVENTIONS							
- Exclusion		X	X	X	X	X	X
- Environmental Education Campaign	X						

A conservation-oriented management plan will be performed in each pilot area, consisting of a series of interventions performed throughout the project.

For practical effects, interventions will be performed in one or more experimental plots selected in each pilot area. The size and location of the plots will depend on the characteristics of the pilot area and on the type of intervention to be performed, taking into account environmental, economic, and practical criteria. An average size of 10 ha of intervened unit per pilot area has been considered for planning purposes and cost estimates.

1.2.2 Restoration Activities in Pilot Areas

- **Active Revegetation**

Reforestation. Planting of forests with native species where the initial densities are close to 1,000 plants per ha. The seedlings are planed with guide stakes, fertilizer and rabbits protection. Bi-monthly irrigation is required during the period of greater water deficit (from November to March).

Enrichment Planing. Inter-planting the clearings with 300 plans/ha of native tree and shrub species. They shall also be irrigated for settlement during 5 months per year during the first three years.

Direct Sowing. Sowing with grass species in land with high level of bare soil. This technique is used to avoid or stop erosion processes and to improve soil conditions for future forest planting activities. Land preparation works are required, including breaking up the clods and/or the construction of rainwater collection and control systems.

Re-sowing (redistribution of the vegetal humus) Partial removal of topsoil from well-conserved areas to place in highly eroded areas, followed by seeding with native species.

- **Forest Interventions**

Release Cutting. Removing dead or seriously damaged trees, or invasive non-native species as a way to reduce competition for the preferred native species (i.e., the litre – quillay – peumo trees; or otherwise, those species listed as having conservation problems, such as the guayacán and frangel trees).

Pruning. It is usually of a sanitary nature and results in easier circulation, improvement of the space structure, and creation of habitats.

Clearing of Seedling Intended to reduce the number of scions per rootstock, considering their size and distribution. The aim is to support growth of the best rootstocks and facilitate the development of a composite forest.

Fire-Break Clearance. It is used to pre-stop fires.

- **Water Trapping Interventions**

Water Collectors. Construction of boxes and collectors to improve infiltration on runoff rainwaters

Surrounding Furrows. Mostly developed in areas that lack vegetation cover in order to favor the infiltration or utilization of water by existing desirable species, or by those that would be planted.

- **Fauna Management Related Interventions**

Installation of Perches for Predatory Birds (lagomorph control). Installation of wood perches in specific areas for a better control of rabbits and rats by predatory birds.

Wild Fauna No Hunting Campaign. Devise campaigns oriented to protect foxes and cats that are natural pest controllers (rodents). In its simplest form, this campaign will consist of installing relevant signs and training trail guards so that they may also serve as hunting inspectors.

- **Erosion Control Interventions**

Control of Gullies. Installation of retaining structures in areas with huge erosion ditches. These structures will limit flows of water and promote the stabilization of soils. They consist of wood or stone dams (with additional elements for control of dam permeability) that would stop the dragging of material, favor vegetable reforestation and stabilization of gullies.

- **Other Interventions**

Exclusion. A complementary measure used to grant protection to those sectors in which any conservation interventions are taking place. Its main purpose is to isolate the area from external influences that may alter the estimated results, by excluding grazing animals and discourage access of people. A six-wire fence, or an Ursus-mesh fence with two wires will enclose the perimeter of the areas where the interventions are being performed.

Environmental Education Campaign. The environmental awareness and education of users of camping and excursion areas will be enhanced by installing information facilities, by implementing garbage collection systems, by distributing information material and the regulation of the use of spaces, in an effort to avoid damages due to misuse or excessive pressure on the land and its resources.

2. Implementation and monitoring of management plans oriented to the conservation of habitats in Pilot Areas.

2.1 Implementation of Interventions: Upon completion of the identification and characterization of pilot areas, the corresponding management plans will be implemented, taking into consideration the specific seasonal requirements of each type of intervention performed.

2.2 Monitoring

A follow-up program for every area will be conducted to evaluate results of the management plans. This program is based on monitoring campaigns conducted to register status of the indicators of each type of intervened environment. Seasonal and practical aspects will be taken into consideration in order to determine frequency of the campaigns. Notwithstanding this, and bearing in mind the nature of the interventions and the climatic features of the zone where the project is being carried out, there will be monitoring campaigns aimed at evaluating the situation of the experimental plots at the end of the rain season and at the end of the dry season. Comparing measurements performed during each monitoring campaign with the baseline information would allow assessing the effectiveness of the interventions and would permit reconsidering specific measures to solve any particular problems that may arise.

3. Construction of Conservation Support Infrastructure

3.1 Mountain Trails

The project will support the development and implementation of environmental education and hiking trails throughout the project's area. These trails will have all information and support structure required to provide safety to the users and promote its rational use, consistent with conservation purposes. In most cases trails will become the pilot areas' main access trails.

3.1.1 Environmental Information/Interpretation

Use of signs in natural spaces would allow a better use of the trails and help control the potential negative impacts in special zones. The strategic use of signs will facilitate environmentally-friendly leisure, sport, and educational activities. The information system used in the trails is divided into four groups, for organization purposes and to deliver the best information to visitors:

- a. **General Information Panels.** These are the largest (size 2.30 x 0.95 m) panels or signs installed at the entrance of every sector to be visited. The panels display briefly and clearly all relevant information of the area encompassed by the different trails; a map of the area with sight-seeing places such as watchtowers, camping areas, water facilities, scenic landscape, archaeological sites, representative wildlife, trails, activities offered, difficulty of routes, duration, legal regulation and by-laws.
- b. **Special Information Panels.** These are smaller (0.55 x 0.45 m) panels installed in special areas such as watchtowers, sight-seeing place, camping areas, among other. They provide special information of a particular site (name, altitude, representative flora and fauna, restrictions, safety rules), or they may provide orientation as in the case of the maps located at specific points of the route to indicate forking or trail crossing. The panels indicate to visitors the specific position of the different alternatives of routes to follow or the distance, time, and difficulty of each trail.
- c. **Route Poles.** There are two types of route poles depending on their function: (i) **Orientation:** The poles are laid out along the different trails to orient visitors and keep them in the corresponding trails; and (ii) **Interpretation:** The poles are laid out along the route and also at specific spots that are representative of the flora, vegetation or fauna spotting. In line with their educational purposes, they display specific information on the species of that site. Moreover, they may include detailed information on other points such as the most relevant aspects of the physical and cultural landscape.
- d. **Information Brochures.** They include general information on the area to be visited, in a condensed, easy-to-follow and didactic manner, e.g. a map or drawing of the area that contains information of different places that could be visited, a rank of difficulty of the different trails, the rules to be observed, safety considerations for every sector, emergency phones, people responsible for the area, and general recommendations (education card).

3.2 Mountain Shelters

The support infrastructure for the educational and research activities considers the construction of two mountain shelters located in High Andean steppe setting over 2,000 masl. These shelters would be located at the height of the two main basins of the Andean Foothills: the De Ramón Basin, and the Macul Basin. The layout of trails and pilot areas in high altitude environment (Sclerophyc High Andean Bushes and High Andean Steppe) will be the main criteria for selecting the site for the shelters. It is estimated that these facilities will provide support to the environmental education and reconnaissance activities in high-altitude ecosystems. Groups of researchers and excursionists that are wandering through the trails or work in high altitude pilot areas would find a place that will provide protection in severe weather conditions.

ATTACHMENT 1: ADDITIONAL INFORMATION ON THE MSP PROJECT PROPOSER

(1) Full Legal Name Of Institution

Asociación de Municipalidades Proyecto Protege (Association of Town Councils Project Protege).

(2) Background

The association was legally established on August 28th, 1993. The association's mission can be summarized in three points:

- To conserve the mountain range in proximity to Santiago giving special attention to the conservation, management and arrangement of its main valleys.
- To promote a culture of respect for and care about nature.
- To contribute to the sustainable development of the city of Santiago and preservation of the environmental and heritage value of its mountain ranges (the mountain ranges represent about 85% of the total Metropolitan Region surface).

(3) Names Of Governing Board Members, Officers And Key Personnel

Governing board members:

- Mr. Fernando Castillo Velasco - President
Mayor of La Reina Town Council
- Ms. Marta Ehlers Bustamante
Mayor of Lo Barnechea Town Council
- Mr. Francisco De La Maza
Mayor of Las Condes Town Council
- Mr. Carlos Alarcón Castro
Mayor of Peñalolén Town Council
- Mr. Pablo Zalaquet
Mayor of La Florida Town Council
- Mr. José Manuel Ossandón
Mayor of Puente Alto Town Council
- Mr. Miguel Marquez
Mayor of San José de Maipo Town Council

Officers:

- Mr. Felipe Bañados Munita - Executive Director
- Mr. Carlos Fuenzalida Fernández - Director

Key personnel:

- Ms. Marina Díaz Gajardo - Secretary
- Mr. Jorge Gangas Vergara - Mountain Adviser
- Mr. Gerardo Saffer Krause - Mountain Adviser
- Ms. Francisca Rusque Celedón - Journalist
- Ms. Ursula Faber Berger - Designer

(4) Membership

N.A.

(5) Recent Programs/Projects/Activities

The following are the recent programs, projects and activities, presented by action area:

Recreation

- Prepared a general plan of mountain paths that include three hiking trails totaling 23 kilometers in length and reaching an altitudes of 2,800 masl.
- Negotiated an agreement between CONAF and Protege for the education and control of visitors in the mountain range near Santiago that includes the first unit of park keepers.
- Negotiated an agreement between Ministerio de Bienes Nacionales - Fundación Chile and Protege to develop Rio Olivares Park.
- Prepared a project to develop a hiking map of middle mountain range

Territorial Arrangement

- Negotiated an agreement between MINVU - Intendencia and Protege to develop a master plan for the mountain range.
- Supported a first-phase research project in the proposed project area.

Restoration of Andean Ecosystem

- Supported research on the potential uses of soil that included a study on a 12'900 ha area including its vegetation, hydrology, fauna and other characteristics.
- Reforestation on experimental parcels.
- Botanical Garden at Town Council Park of La Reina.

Education and Mountain Culture

- Liberation of Chilean wild birds.
- Meeting of young people at Provincia's peak.

Legal Protection

- Completed a property register of landowners at mountain range near Santiago covering an area of more than 30'000 hectares.
- Monitoring and enforcement of illegal actions in the mountain range.

Information Dissemination

- Publication of five bulletins.
- WEB page at www.protege.cl

(6) Publications

Five edited bulletins:

N°1: August – September of 1998, 1200 copies

N°2: October – December of 1998, 1200 copies

N°3: April – June of 1999, 1200 copies

N°4: July – November of 1999, 1600 copies

N°5: January of 2000, 1600 copies

(7) Annual Budget and Sources of Revenue

TABLE 11. ANNUAL BUDGET (IN US\$)

Detail of Expenditures and Investments of 1999		
		Amount \$
Operational Expenditures		
Fees		69,967
Goods and Services		12,116
Requirement of Investment for Functioning		4,096
	Sub Total	86,179
Investment Metropolitan Region		
Recreation		5,119
Territorial Arrangement		6,826
Restoration		1,706
Dissimination		5,119
Education and Culture		3,413
Legal		3,413
	Sub Total	25,596
Total		111,775

TABLE 12. SOURCES OF REVENUE (IN US\$)

Sources of Revenue of 1999		
		Amount \$
Town Council		
Lo Barnechea		30,717
La Reina		17,065
Las Condes		17,918
La Florida		10,239
Peñalolén		13,652
Puente Alto		17,065
San José de Maipo		5,119
Total		111,775

(8) Experience With Managing Grant-Financed Projects

TABLE 13. EXPERIENCE WITH MANAGING GRANT-FINANCED PROJECTS

Purpose of project	Status	Grantor	Grant Amount US \$
Research about potential uses of soil	Finish	European Community	33,900
Research about foot of the mountain and andean mountain range, first phase: diagnosis	Finish	BID	67,800
Equipment of hiking paths	Finish	Lo Barnechea Town Council	17,000
Equipment of hiking paths	Finish	Las Condes Town Council	7,600
Equipment of hiking paths	Finish	La Reina Town Council	8,500

(9) Administration And Accounting-Control Procedures; Current Auditing Arrangements

All the administration and accounting-control procedures are the responsibility of the Town Council designated to support and preside over the association. At the moment the La Reina Town Council is responsible for financial management. That Financial Management System is described in a separate Annex—“*Lista de verificacion para la evaluacion de la gestion financieros*”—which is available in project files and which has been reviewed by the Bank’s Financial Management Specialist in Buenos Aires.

(10) Description Of How The Institution Procures And Contracts For Goods, Services And Works

The association procures and contracts for goods, services and works through the designated sponsoring Town Council (La Reina Town Council). For consulting services less than US\$10,000 comparison of at least three CV method is used. For larger individual consultant contracts a notice is published. For staff of PROTÉGÉ, two or three candidates are considered and selection is made on the basis of professional capacity, experience and ability to adapt to the team. Shopping procedures include written invitations to at least 3 qualified suppliers; the supplier submitting the lowest quotation and complying with the requirements of the invitation is selected. Procurement specialists from the designated Town Council (i.e., La Reina) would be incorporated into the PIU to provide the needed procurement assistance.

(11) Contact Person:

Name/Title: Felipe Bañados Munita / Executive Director
 Address: Mardoqueo Fernandez #193 of. 102, Providencia
 Telephone: (56-2) 233-6697 234-4615
 Fax: (56-2) 333-2721
 E-mail: felipeb@protege.cl
 WEB site: www.protege.cl

ATTACHMENT 2: PROCUREMENT UNDER THE PROJECT

Procurement Responsibilities:

PROTEGE will be responsible for carrying out the procurement of goods and services as detailed in the Procurement Plan for Goods and Services (see Table 1 below).

Procurement Methods:

Consulting Services

Consultant services to provide technical assistance and training will be procured in accordance with Guidelines for the Selection and Employment of Consultants by World Bank Borrowers (published in January 1997 and revised in September 1997 and January 1999).

Consulting, training and research under the project would consist of consultancies for individuals providing technical assistance to the project. Individual consultants will be selected according to the process outlined in section V of the Bank's Consultants Guidelines. Although no contracts with firms or NGOs are envisaged in the procurement plan, in the event that the services of such organizations are required, contracts will be awarded after a selection procedure based on Consultants Qualifications, as described in section 3.7 of the Guidelines.

Personnel

Procuring the services of technical support personnel (e.g. project coordinator) and administration support personnel (e.g. accounting clerk) will be carried out in accordance with PROTEGE's employment policies outlined in Attachment 1. Remuneration is awarded commensurate to qualifications and experience. Overall, PROTEGE's selection process is aligned to the Bank's guidelines for the selection of individual consultants.

Goods/Services

PROTEGE will follow the existing procurement procedures of the participating municipal governments which are consist with World Bank policies. Goods and services procured under the project will be small and will be contracted using three price quotation method.

Works

PROTEGE will follow the existing procurement procedures of the participating municipal governments which are consist with World Bank policies. Works procured under the project will be few (7 in all consisting of 4 trails, 2 mountain shelters, and 1 environmental education center), small (between US\$ 20,000 and US\$ 80,000 each) and will be contracted using three price quotation method and awarded to the contractor submitting the lowest quotation. Lump sum, fixed-price contracts would be used.

Procurement Monitoring and Reporting:

PROTEGE will follow its standard procedures for monitoring procurement implementation, including monitoring contract modifications and extension of completion time frame. PROTEGE will maintain records of procurement activities carried out under the grant.

TABLE 14. PROCUREMENT PLAN FOR GOODS AND SERVICES (\$ US)

Expenditure Categories (US\$)	GEF		Methods	Year
1. Consultants	314,100	0		
Legal Consultant	20,000	0	Consultant	1 *
Economist	5,000	0	Consultant	1- 3 *
Sociologist	14,400	0	Consultant	1- 3 *
Senior Environmental Consultant	12,600	0	Consultant	1- 3 *
Environmental Specialist	24,000	0	Consultant	1- 3 *
Field manager	54,600	0	Consultant	1- 3
Staff Botanist	6,000	0	Consultant	1- 3 *
Staff Zoologist	6,000	0	Consultant	1- 3 *
Staff Soil Conservation Specialist	6,000	0	Consultant	1- 3 *
Staff Entomologist	6,000	0	Consultant	1- 3 *
Senior Protected Areas Specialist	5,400	0	Consultant	1- 3 *
Overall coordination	15,600	0	Consultant	1- 3 *
Consultant for trails route and design	4,200	0	Consultant	1 *
Consultant for Mountain shelters design	2,400	0	Consultant	1 *
Labour	7,700	0	Manpower	1 *
Consultant for environmental education	19,200	0	Consultant	1- 3 *
Consultant to design educational material	5,400	0	Consultant	1- 3 *
Monitors for children's field education	18,000	0	Consultant	1- 3 *
Monitors for teachers training programmes	12,500	0	Consultant	1- 3 *
Educational consultant to monitoring the Pilot Programme	3,600	0	Consultant	1- 3 *
Manager of the Educational Center Project	27,600	0	Consultant	1 *
Educational consultant set the guidelines for the Educational Center Project	4,800	0	Consultant	1 *
Architectural services to design the Educational Center Project	9,600	0	Consultant	1 *
Cost assessment of the Educational Center Project	4,800	0	Consultant	1 *
Accounting and procurement	11,000	0	Consultant	1- 3 *
Follow up and assessment of the Pilot Programme	7,700	0	Consultant	1- 3 *
2. Personnel	76,300	360,400		
Project general director	22,300	31,000	Use of present personnel acquired through PROTEGE employment policies	1- 3
Technical manager of the project	54,000	0		1- 3
Staff	0	25,400		1- 3 *
GIS Specialist and mapping	0	10,000		1- 3 *
Park ranger	0	294,000	CONAF + PROTEGE	1- 3
3. Goods and Services	75,100	248,200		
Materials	0	2,000	PROTEGE's Procurement Policies, i.e., 3 price quotations	1
Reproduction of maps	3,900	0		1
Publication of the Master Plan	2,000	0		3
Reforestation	0	96,000		1
Maintenance of reforested area	0	103,200		2 - 3
Enrichment planting	10,000	0		1
Seeding	5,900	0		1
Reseeding	900	0		1
Pruning and thinning	10,200	0		1

Santiago Foothills: Biodiversity Conservation of Mediterranean-Mountain Ecosystem

Water collection structures	2,000	0		1
Biological pest control	700	0		1
Erosion control structures	8,400	0		1
Publication of Monitoring reports	300	0		1- 3
Brochure	10,000	0		1
Expenditure Categories (US\$)	GEF		Methods	Year
Communications equipment	3,700	0		1
Production of information brochures	1,500	0	PROTEGE's Procurement Policies, i.e., 3 price quotations	1
Production of educational materials	4,500	0		1
Implementation cost of Education Center Proyect	0	15,000		2
Equipamiento, insumos y arriendo de oficina	0	32,000		1- 3
Implementación de página Web.	11,000	0		1- 3
4. Operational Costs	46,700	7,400		
Legal Services	6,000	0	PROTEGE's Procurement Policies, i.e., 3 price quotations	1
Travel and per diem	21,000	0		1- 3
Transport of materials	3,300	0		1
Food for field trips (Childrens Educational Programme)	14,400	0		1- 3
Travel to field trips (Childrens Educational Programme)	0	7,400		1- 3
Implementation of Public Educational Programme	2,000	0		1- 3
5. Works	153,800	15,000		
Fencing for exclusion sites	19,200	0	PROTEGE's Procurement Policies, i.e., 3 price quotations	1
Infrastructure for public use areas	10,000	0		1
Access signs	4,400	0		1
Trail and area signs	2,600	0		1
Safety signs	2,000	0		1
Posts	26,400	0		1
Peak signs	900	0		1
Rangers cabin	10,000	0		1
On site wooden map	3,900	0		1
Gate	4,500	0		1
Safety infrastructure	5,600	0		1
Material for building mountain shelters	11,000	0		1
Furniture and equipment for Mountain Shelters	5,000	0		1
On site permanent road maps	1,800	0		1
Construction of Environmental Education Center	46,500	15,000		2
Mapping	8,400	0		1
6. Workshops	29,000	0		
Implementation of Workshops	15,000	0	Reimbursable expenditures of the grant recipient	1- 3
Workshops for public sector and municipalities	4,000	0		1- 3
Work shops with results of the Project in 2 regions in Chile	10,000	0		3
7. Unallocated	30,000			
TOTAL MSP	725,000	631,000		

* Part Time

ATTACHMENT 3: PROGRESS REPORTS, AUDITS, DISBURSEMENTS, AND SPECIAL ACCOUNT UNDER THE PROJECT

Progress Reports

PROTEGE will prepare and forward to the Bank reports every six months covering progress in achieving the activities and targets for the previous 6 months, linking them to indicators for project activities (see Annex 1). PROTEGE shall also have the responsibility of preparing the project's financial statements annually, including balance sheets and income and expenditure statements according to generally accepted accounting principles. Financial statements shall show actual payments against those budgeted. PROTEGE will maintain separate records and accounts for project expenditures as well as a register of items purchased.

Disbursements

The following table sets forth the categories of items to be financed out of the proceeds of the grant and the allocation of the amounts of the grant to each category.

TABLE 15. ALLOCATION OF GRANT PROCEEDS (US \$)

Expenditure Categories (US\$)	GEF
1. Consultants	314,100
2. Personnel	76,300
3. Goods	75,100
4. Other Costs	46,700
5. Works	153,800
6. Workshops	29,000
7. Unallocated	30,000
TOTAL MSP	725,000

Disbursements will be made in three tranches, as set forth in Table 16 below. The closing date is June 30, 2005.

TABLE 16. ESTIMATED SCHEDULE OF GRANT DISBURSEMENTS (US \$)

Disbursement Tranches	Expected Disbursement Date	Amount of the Tranche	Cumulative Disbursement		Grant Balance
			Amount	% of Total	
1	October 2001	225,000	225,000	30	500,000
2	October 2002	250,000	475,000	35	250,000
3	October 2003	250,000	725,000	35	0

Account Deposit and Replenishment

The World Bank will deposit funds into PROTEGE's banking account. The initial deposit will be limited to \$225,000 or 30 percent of the total grant, corresponding to the estimated project expenditures for the first year of the project. The account will be replenished every year in accordance with the procedures set out below, provided that satisfactory progress and achievements of the replenishment targets stated in Table 17 of Attachment 3 have been met.

Replenishment applications will be sent to the Bank at least one month prior to the end of the disbursement period, and will be supported by the following documentation:

- (i) reconciled statement from the commercial bank in which the account is established showing all transactions in the Special Account (Statements of Expenditures and their supporting documents will be maintained by PROTEGE and will be available for Band staff for review);
- (ii) annual reports covering progress in achieving the activities and targets corresponding to each disbursement period; and
- (iii) a forecast of grant funds needed to be covered by the withdrawal application for the next disbursement period, adjusting for any under-expenditure during the previous period.

The amounts to be disbursed in tranches 2 and 3 may be amended during the annual review process, by mutual agreement of PROTEGE and the Bank, should project implementation experience demonstrate the need for adjustment. Indicators may also be adjusted during the annual review process prior to the year which they would apply by mutual agreement of PROTEGE and the Bank.

TABLE 17. PROJECT MONITORING AND EVALUATION PLAN

Out-puts	Targets for First 6-month period	Targets for Second 6-month period	Targets for Third 6-month period	Targets for Fourth 6-month period	Targets for Fifth 6-month period	Targets for Sixth 6-month period
A.	* First workshop *Studies: Economic, Sociological	*Finish agreement with major Stakeholders *Second workshop	*Third workshop	*Fourth workshop *Institutional study	*Fifth workshop	*Sixth workshop * Draft law
B.	* Start Master plan *Presentation Environment Impact *Start AP * Start planning of works * Baseline measurement of woody cover on pilot areas	* Finish Master plan (First part) Start works	Complete planning of fencing and control posts	*Finish trail works Complete planning of shelters	Complete works on fencing & control posts	*Finish Master plan (Strategy) Complete AP Complete the shelters. *End-of-project measurement of woody cover on pilot areas
C.	* Start Education strategy design	*Finish Education strategy (First.Part) *Start pilot reclamation activities		* Training Workshop completed	*Finish pilot activities *Complete CEA planning	*Finish Education strategy (Final.Part.) * Construction CEA
D.	*Project management unit established *M&E plan designed *WEB page designed	* paper with relevant lessons published		*Sociological Monitoring *2 papers with relevant lessons published	*2 papers with relevant lessons published	*Final project evaluation completed *Sociological Monitoring Lessons disseminated via WEB site *CD production *Video production